

2025-2026 Graduate Catalog

2025-26

GRADUATE COURSE CATALOG



KANSAS STATE
UNIVERSITY

Governance and Faculty

Governance Councils

Faculty

The faculty at Kansas State University is dedicated to excellence in teaching, student advising, research, extension education, scholarly achievement, and creative endeavor.

K-State recognizes superior teaching with annual faculty awards. Citations for the Outstanding Teachers of the Year and for Distinguished Graduate Faculty Members are presented at commencement. The university also honors faculty members who contribute to the expansion of knowledge in their respective fields.

The faculty assumes a major responsibility to participate in outreach activities that serve the citizens of the state, and many hold leadership positions in their disciplines and in professional organizations.

Faculty Senate

Graduate student learning outcomes

Graduates of advanced degree programs at Kansas State University will:

Knowledge

Demonstrate thorough understanding and/or competency in a specific area of emphasis, study, or profession.

Skills

Demonstrate the ability to apply knowledge through critical thinking, inquiry, analysis, and communication to solve problems and to produce scholarly and creative works including but not limited to design, art, performance, and original research in the form of a thesis or dissertation.

Attitudes and Professional Conduct

Exhibit an awareness of their responsibilities (professional integrity, ethical behavior, ability to work with diverse groups of people, etc.) and engage in professional conduct towards all constituent groups, including students, faculty, public, etc.

Assessment of student learning

K-State is committed to student learning and to providing the highest quality educational experiences for its students. The university upholds the assessment of student learning and the use of the results of the assessment as key strategies to ensure continuous improvement of student learning. Student learning outcomes at the university, degree program, and support program levels provide a shared vision of what we value and what students are expected to learn.

Within a culture of reflection, scholarship, trust, and shared responsibilities, faculty, with participation from students, administrators, alumni, and K-State constituents, develop and implement ongoing and systematic assessment strategies to understand what, how much, and how students learn. Through the use of both direct and indirect sources of evidence of student performance, results from assessment guide collective actions for, among others, curricular change, better learning opportunities for students, improvement of teaching, and more effective academic support services.

Further information can be found on the K-State Office of Assessment web page.

All-University Regulations

Student Conduct

Philosophy of Student Conduct

At Kansas State University students have a direct and primary role in the establishment and enforcement of campus and living group policies and regulations. The basic philosophy of discipline is one of education and enforcement of community standards. Since that is the ultimate purpose, we focus on the growth and development of the student. Most efforts are directed at preventing problems, or at least correcting them, rather than concentrating on punishment. The responsibility for proper conduct is put upon the student, not the university, with the assumption that most students do not try to intentionally cause violations, and will generally respect the rights and property of others.

The following principles govern the disciplinary process. Every effort is made to bring about outcomes that are positive for all parties involved; students will be members of all Student Governing Association judicial bodies; formal hearing processes are fundamentally fair and respect the rights of the individuals involved; confidentiality will be respected; records of proceedings will be released only on written authorization of the student(s) involved unless otherwise authorized by law or court order. The procedures are outlined in the SGA Judicial Code, included in the by-laws to the SGA Constitution.

Descriptions of the judicial structure and process, as well as university policies, are free and are available in the Office of Student Activities and Services in the K-State Student Union and on their web page.

Prohibited conduct

Neither this nor any other university policy is violated by actions that amount to expression protected by the state or federal constitutions or by related principles of academic freedom.

Student Code of Conduct

<https://www.k-state.edu/sga/judicial/student-code-of-conduct.html>

The following described conduct is prohibited by this Code and subject to sanctions by the University:

1. Acts of dishonesty, including but not limited to the following:
 1. Providing and/or supplying false information to any University official, faculty/staff member, or office.
 2. Forgery, alteration, or misuse of any University document, record, or instrument of identification.
 3. Tampering with the election of any organization or student governing body.
2. Conduct that substantially disrupts or interferes with teaching, research, administration, disciplinary proceedings, or other University-sponsored activities.
3. Conduct directed towards another person(s) that is intended to and does substantially disrupt or interfere with another's educational or employment opportunity, peaceful enjoyment of residence, or physical security.
4. Attempted or actual theft of property.
5. Intentional damage to property or vandalism.
6. Engaging in hazing of a member or third party for the purpose of initiation into, or admission into, affiliation with, or continued membership within a recognized student organization (RSO), is strictly prohibited. Hazing includes, but is not limited to any action, activity, or situation by which an RSO member intentionally,

- negligently, or recklessly endangers the physical or mental health, welfare, or safety of an individual, creates excessive fatigue, consumption of any substance or liquid (including but not limited to alcohol), sleep deprivation, mental or physical discomfort, exposes a person to extreme embarrassment or ridicule, involves personal servitude, destroys or removes public or private property, or implicitly or explicitly interferes with the academic requirements or responsibilities of a student. Apathy, acquiescence, or consent to hazing shall not be a defense to this violation.
7. Telephone or Internet harassment, which shall include: (KSA 21-6206)
 1. Making calls containing or making or transmitting any comment, request, suggestion, proposal, image or text which is lewd or obscene remarks.
 2. Making or transmitting calls, whether or not conversation ensues, or any comment, request, suggestion, proposal, image or text with intent to substantially interfere with another person's educational or employment opportunity, peaceful enjoyment of residence, or physical security, including the unwanted distribution of personal information. Transmission of comments, requests, suggestions, proposal, images, or texts may include any transmission utilizing electronic means, including but not limited to sending text, picture, video, or audio messages over social media websites, social media applications, instant messenger or chat services, message boards or any other electronic format.
 8. Failure to comply with directions of University faculty, staff, or law enforcement officers acting in performance of their duties or failure to identify oneself to these persons when requested to do so.
 9. Unauthorized possession, duplication or use of keys, or other devices that provide access to any University property or services.
 10. Unauthorized presence in or use of University premises, facilities, or property.
 11. Use, possession or distribution of alcoholic beverages in an unlawful manner or otherwise in violation of a university policy.
 12. Use, possession, distribution of a controlled substance in an unlawful manner or otherwise in violation of a university policy.
 13. Possession or use of firearms, explosives, weapons, or dangerous chemicals on University premises or at a University Education Program and Activities or any other violation in violation of the University's Weapons Policy.
 14. Intentionally initiating or causing to be initiated, any false report, warning or threat of fire, explosion or other emergency, or tampering with, misusing, or disabling university-installed safety equipment.
 15. Participation in a campus demonstration which unreasonably disrupts the normal operations of the University included but not limited to the following examples:
 1. infringing on the rights of;
 2. inciting others to disrupt scheduled and/or normal;
 3. intentional obstruction which unreasonably interferes with freedom of movement, either pedestrian or vehicular;
 4. inciting another person to breach the peace.
 16. Intentionally engaging in conduct that prevents another person from exercising freedom of expression protected by law.
 17. Conduct that is disorderly, lewd, or obscene; breach of peace; or inciting another person to breach the peace.
 18. Any violation of "KSU Information Technology Usage Policies."
 19. Abuse of the SGA Judicial Program, including but not limited to:
 1. Falsification, distortion, or misrepresentation of information.
 2. Disruption or interference with the orderly conduct of a judicial proceeding.
 3. Knowingly initiating a complaint without cause.
 4. Attempting to discourage an individual's proper participation in, or use of, the judicial system.
 5. Attempting to influence the impartiality of a member of a judicial board prior to, or during the course of, the judicial proceeding.
 6. Verbal, written, phone, or physical harassment, and/or intimidation of a member of a judicial board.
 7. Influencing or attempting to influence another person to commit an abuse of the judicial program.
 20. Failure to comply with the sanction(s) imposed under this Code.
 21. Any illegal or unauthorized taking, selling, or distribution of class notes.
 22. Violation of University policies, rules, or regulations.

23. Violation of federal, state or local law that causes a substantial disruption to university operations.

Honor and Integrity System

Camilla Roberts, Director
K-State Honor and Integrity System
1800 Claflin Road, Suite 001
Manhattan, KS 66502 (see map)
785-532-2595
E-mail: honor@k-state.edu

The Honor and Integrity System operates with the belief that college students are still developing in integrity--the ability to make wise choices in dilemmas. Students who are reported and found in violation are given educational sanctions in hopes of helping those students become better citizens in their professions.

- The honor and integrity system uses the Faculty Senate approved definition of academic dishonesty found in the Faculty Handbook and at the honor and integrity system web page.
- Students' rights are enumerated under Article XII of the Student Governing Association constitution.
- The Honor Council constitution can be reviewed in the student handbook section of the campus phone book. The investigation and adjudication procedures can be reviewed on the web page.

Kansas State University's honor and integrity system is based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, each student's work is performed honestly and without unauthorized assistance. Students who register at K-State acknowledge the jurisdiction of the honor system.

The policies and procedures of the graduate and undergraduate honor and integrity system apply to all students enrolled in courses on campus, off-campus, or via distance learning.

A vital component to the Honor and Integrity System is the inclusion of the Honor Pledge which applies to ALL assignments, examinations, or other course work undertaken by undergraduate and graduate students.

Honor Council

The honor and integrity system trusts students to perform their academic work honestly and with integrity. It is based on trust and administered jointly by students and faculty members of the Honor Council. Having students equally share in the process increases the visibility of Honor Council procedures and promotes a community of trust.

The members of the Honor Council can be found [here](#).

Reporting Academic Dishonesty

All academic community members, students, and faculty are urged to report acts of academic dishonesty. Contact the honor and integrity system director at honor@k-state.edu to discuss or report an alleged violation.

Plagiarism

Plagiarism covers unpublished and published sources, taking someone else's intellectual work and presenting it as your own. Borrowing another's semester paper, handing in a paper purchased from an individual or agency, or submitting papers from a living group, club, or organization file are all punishable as plagiarism. The current definition of plagiarism is in the University Handbook, Appendix F.

Each discipline sets the standard for attribution and acknowledgment of literary indebtedness. If in doubt, students should consult with their department or with recognized handbooks in their field.

The guidelines apply to faculty and research assistants who may use students' and colleagues' research and ideas, as well as students who use source materials and authorities and students who use other students' ideas and work.

Other Forms of Academic Cheating

Other forms of academic dishonesty subject to penalties may be found [here](#).

University Policies

Students, faculty, staff, and administrators are community members dedicated to individual growth and development.

Enrollment at K-State entails responsibilities as well as privileges. Acceptance of and adherence to University policies are necessary to protect the rights of others and the health of the community.

The most current versions of these policies are available on the [website](#).

Advertising, Sales, and Solicitation

KFacilities of Kansas State University are primarily for University purposes of instruction, research, and public service; they are not available for unrestricted use by non-university groups. The regulation of commercial activity and the posting and distribution of advertising materials on campus are necessary so that they do not interfere with the academic mission of the University and that income gained from activities held on campus benefits the University. The regulations governing fund-raising and the posting and distributing of literature are available in the PPM, Chapter 8580.

Alcohol and Cereal Malt Beverage Policy

The legal drinking age in Kansas for alcoholic beverages is 21. The Kansas Board of Regents policy permits the service and consumption of alcoholic beverages under authorized and appropriately controlled conditions and regulations. The K-State policy includes information on alcohol and cereal malt beverage service and consumption in residence halls, at athletic events, and for student organizations. Additional information is available in the PPM, Chapter 3053.

Drug-free Workplace Policy

In 1988, Congress passed the Drug-Free Workplace Act, which applies to all institutions holding and applying for federal grants and contracts. K-State adopted the policy that the unlawful manufacture, distribution, dispensing, possession, or use of controlled substances is prohibited in its workplace. Additional Information is housed under the Clery Compliance reporting located [here](#).

Facilities Usage

K-State facilities are available for authorized groups to use for activities that complement the university's teaching, research, and service programs. Policies and procedures for using K-State facilities (other than the K-State Student Union) are available in the PPM, Chapter 7840.

Policies and procedures for use of the K-State Student Union are available on the [website](#) here or in the PPM, Chapter 8540: Student Organization Recognition Policy.

Gender

The university seeks to create an environment where all students, faculty, and staff interact solely based on individual strengths and characteristics without having those interactions shaped by generalizations, stereotypes, or valuations based on gender. Policy on Gender and Policy on Prohibiting Discrimination, Harassment, and Sexual Violence, the Office of Civil Rights, and additional resources and support are available in the Center for Advocacy, Response, and Education (CARE).

HIV/AIDS University Guidelines

Under the direction of the Kansas Board of Regents, the university has developed guidelines to assist students, staff, and faculty members in situations involving acquired immunodeficiency syndrome (AIDS) or the causative agent, human immunodeficiency virus (HIV). Current guidelines are available upon request from the Lafene Health Center.

Political Activity Guidelines

The students, faculty, and administration at Kansas State University encourage all members of the University community to take advantage of any and all opportunities to educate themselves regarding the candidates and issues relating to national, state, and local elections. Guidelines are available in PPM, Chapter 8560. In addition, a comprehensive collection of political activities, laws, regulations, and policies is available on the webpage.

Discrimination, Harassment, and Sexual Harassment

Kansas State University is committed to maintaining academic, housing, and work environments free of discrimination, harassment, and sexual harassment. Discrimination based on race, color, ethnicity, national origin, sex, sexual orientation, gender identity, religion, age, ancestry, disability, genetic information, military status, or veteran status is prohibited. Retaliation against a person for reporting or objecting to discrimination or harassment or for participating in an investigation or other proceeding violates this Policy, whether or not discrimination or harassment occurred. This Policy is not intended for, and will not be used to, infringe on academic freedom or to censor or punish students, faculty, employees, or staff who exercise their legitimate First Amendment rights.

Harassment under these definitions should be reported to the university administrator responsible for the department or unit or to the Office of Institutional Equity. Copies of the policy can be found in PPM, Chapter 3010, and the University Handbook, Appendix J.

Sexual Violence

No form of sexual violence will be tolerated or condoned at Kansas State University. This policy prohibits not only those acts commonly understood to constitute "sexual assault" but all attempts to coerce sexual activity as well. Although the university cannot assure protection from sexual violence, it can state expectations of conduct and impose sanctions on any university student who fails to meet those expectations. Support and resources are available in the Center for Advocacy, Response, and Education (CARE), the Office of Student Support and Accountability, or the Office of Institutional Equity.

Intellectual Property

PPM:7095.100

1. Student Academic Creations

Under Kansas State University and Kansas Board of Regents policies, copyrightable materials created by students in fulfillment of academic or course requirements are considered the property of the student, except when the student collaborates with faculty or staff to create works as part of research or development activities. The University retains a license (permission) to mark, modify, handle, and retain the work as required for instructional or record-keeping purposes. The University cannot use the work in other ways without the consent of the student.

2. Student Employees

Kansas State University retains an ownership interest in creations, inventions, and discoveries developed by students within the scope of their duties as employees of the University. Full details may be found in the Intellectual Property Policy of the Kansas Board of Regents and the Intellectual Property Policy of Kansas State University. The Kansas State University Intellectual Property Policy may be found online at <https://www.k-state.edu/policies/ppm/7000/7095.html> in the KSU Policies and Procedures Manual. The Kansas Board of Regents policy may be found at http://www.kansasregents.org/policies_procedures.html.

Graduate Student Grievance Procedures

If a graduate student feels he or she has been unjustly treated in some aspect of academic work and has been unable to secure a remedy through consultation with the professor(s) involved, with the supervisory committee, and thereafter with the head of the department or chair of the program. In that case, it is the student's prerogative to take the matter to the Dean of the Graduate School. If the Dean cannot arrive at a mutually acceptable solution with the persons concerned, at the student's request. In that case, the Dean will initiate the grievance procedures adopted by the Graduate Council, as described in Appendix A of the Graduate Handbook.

Undergraduate Student Grievance Procedures

Undergraduate Student Grievance procedures are located in the University Handbook, Appendix V.

Community Principles

Principles of Community

<https://www.k-state.edu/about/values/community/>

Kansas State University is a land-grant, public research University committed to teaching and learning, research, and service to the people of Kansas, the nation, and the world. We believe our collective mission is best accomplished when every member of the University community acknowledges and practices the following principles:

We affirm the inherent dignity and value of every person and strive to maintain an atmosphere of justice based on respect for each other.

We affirm the value of human diversity and inclusion for community. We stand united against all forms of discrimination.

We affirm the right of each person to freely express thoughts and opinions in a spirit of civility and decency. We believe that diversity of views enriches our learning environment, and we promote open expression within a climate of courtesy, sensitivity, and mutual respect. For more information, please see the University's Statement on Free Speech and Expression and the University's Statement on Academic Freedom.

We affirm the value of honesty and integrity, and will act accordingly in all professional endeavors and expect the same from our colleagues.

We acknowledge that we are a part of multiple communities, and we have a responsibility to be engaged in a positive way with our civic partners.

We recognize our individual responsibilities to the University community and to the principles that sustain it. We will each strive to contribute to a positive spirit that affirms learning and growth for all members of the community.

Academic Policies and Procedures

Academic Standing

Academic Standing is a formal notice of a student's academic progress. The rules are intended to define what is expected of the students and give them an opportunity to meet the University's academic expectations. At the end of each semester (fall, spring, summer), each student's academic standing is reviewed for action.

Master's Degree

{Graduate Handbook, Chapter 2, section F: Probation & G: Dismissal/Reinstatement}

Probation

Students may be placed on probation as a condition of their admission to graduate programs if warranted by their academic record.

In addition, students who fail to make satisfactory progress in their graduate programs will be placed on probation. Either of the following conditions will warrant probation:

- a. A grade point average lower than 3.0,
- b. The recommendation of the major professor or student's committee that the student's progress is unsatisfactory.

Removal from Probation

Students on probation as a condition of admission will acquire good standing if they achieve a cumulative GPA of 3.0 in the first 9 credit hours of graduate-level course work.

Students placed on probation for deficient grades will be restored to good standing if they achieve a cumulative GPA of at least 3.0. This must be achieved within 2 semesters for full-time students and within 12 credit hours for part-time students.

Students placed on probation after recommendation by the major professor or supervisory committee may be restored to good standing only following the notification by the major professor and supervisory committee that the students are making satisfactory progress.

Dismissal and Reinstatement

Dismissal

A graduate student will be denied continued enrollment at Kansas State University for any of the following reasons:

- a. Failure of a student admitted on probation to achieve a minimum cumulative GPA of 3.0 in the first 9 credit hours of graduate coursework, or failure of a student to meet other conditions specified in the admission letter.
- b. Failure of a student placed on probation for deficient grades to achieve a cumulative GPA of at least 3.0 within 2 semesters for full-time students and within 12 credit hours for part-time students (see section F.3)
- c. Failure to meet published departmental or University requirements.
- d. Failure to maintain satisfactory progress toward a graduate degree.
- e. Failure in the final degree examination(s) (see section J.3).
- f. Failure to acquire mastery of the methodology and content in a field sufficient to complete a successful thesis or dissertation.
- g. Qualifying for placement on probation a second time, except when the first period of probation is a condition of admission (Chapter 1, section C) or when the second period is a condition of reinstatement (section G.2).
- h. A recommendation for suspension or expulsion by the Honor Council.

Reinstatement

A student who has been denied continued enrollment may petition for reinstatement to the same program or for admission to a different one. The procedures for reinstatement are described in Appendix C Graduate Student Reinstatement Procedure.

Students whose petitions are granted are readmitted on probation as a condition of readmission. In such cases, the Readmission Committee usually stipulates enrollment in a specific number of hours or courses, as well as other conditions for probation. To regain regular status, the student who has been reinstated must satisfy conditions described in section F.3 for removal from probation.

Doctoral Degree

{Graduate Handbook, Chapter 3, section F & G}

Probation

Students may be placed on probation as a condition of their admission to graduate programs if warranted by their academic record (Chapter 1, section C).

In addition, students who fail to make satisfactory progress in their graduate programs will be placed on probation. Either of the following conditions will warrant probation:

- a. A grade point average lower than 3.0,
- b. The recommendation of the major professor or student's committee that the student's progress is unsatisfactory.

Removal from Probation

Students on probation as a condition of admission will acquire good standing if they achieve a cumulative GPA of 3.0 in the first 9 credit hours of graduate-level course work.

Students placed on probation for deficient grades will be restored to good standing if they achieve a cumulative GPA of at least 3.0. This must be achieved within 2 semesters for full-time students and within 12 credit hours for part-time students.

Students placed on probation after recommendation by the major professor or supervisory committee may be restored to good standing only following the notification by the major professor and supervisory committee that the students are making satisfactory progress.

Dismissal and Reinstatement

Dismissal

A graduate student will be denied continued enrollment at Kansas State University for any of the following reasons:

- a. Failure of a student admitted on probation to achieve a minimum cumulative GPA of 3.0 in the first 9 credit hours of graduate-level coursework, or failure of a student to meet other conditions specified in the admission letter.
- b. Failure of a student placed on probation for deficient grades to achieve a cumulative GPA of at least 3.0 within 2 semesters for full-time students and within 12 credit hours for part-time students (see section F.3).
- c. Failure to meet published departmental or University requirements.
- d. Failure to maintain satisfactory progress toward a graduate degree.
- e. Failure in the preliminary examination (see section I) or the final examination (see section L).
- f. Failure to acquire mastery of the methodology and content in a field sufficient to complete a successful thesis or dissertation.
- g. Qualifying for placement on probation a second time, except when the first period of probation is a condition of admission (Chapter 1, section C) or when the second period is a condition of reinstatement (see section G.2).
- h. A recommendation for suspension or expulsion by the Honor Council.

Reinstatement

A student who has been denied continued enrollment may petition for reinstatement to the same program or for admission to a different one. The procedures for reinstatement are described in Appendix C Graduate Student Reinstatement Procedure.

Students whose petitions are granted are readmitted on probation as a condition of readmission. In such cases, the Readmission Committee usually stipulates enrollment in a specific number of hours or courses, as well as other conditions for probation. To regain regular status, the student who has been reinstated must satisfy conditions described in section F.3 for removal from probation.

Credit

K-State is responsible for determining the credit hours awarded for coursework in its programs in accordance with the definition of a credit hour for Federal program purposes. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency.

Credit/No Credit Courses

Certain courses for which the learning experience is based primarily on participation and/or attendance may be offered on a Credit/No Credit basis. Courses in research numbered 898 (report), 899 (thesis), and 999 (dissertation) are offered only on a Credit/No Credit basis. Letter grades may not be given for any other such Credit/No Credit courses offered by the university. {*University Handbook, F13*}

For courses that are normally given for a grade, the designation Credit may be obtained in the case of credit by examination.

Course Level Key

In order to maintain a common system of classification of academic information for all state universities, course levels are to be identified by the first digit catalog course number as follows: {*University Handbook, F51*}

000-099	No credit courses.
100-299	Lower-division, undergraduate. Designed as freshman-sophomore courses.
300-499	Upper-division, undergraduate. Designed as junior and senior courses.
500-699	Upper-division, undergraduate. Primarily for juniors and seniors, with an enrollment of less than 50% of master's students.

(Courses numbered 500 may be taken for graduate credit only in a minor field. Courses numbered 600 may be taken as part of a graduate student's major field.)

700-799	Graduate and Upper-Division. Primarily for master's students, with an enrollment of less than 50% of undergraduate-level students.
800-899	Designed primarily for master's students.
900-999	Designed primarily for doctoral students.

Master's: Courses and thesis for master's students who will ordinarily have accumulated from 1 through 30 graduate hours and students enrolled in professional schools (Law, Veterinary Medicine, M.D., Architecture, etc.).

Doctoral: Courses for specialists and doctoral students who will ordinarily have completed more than 30 hours of graduate work.

The dual listing of courses may be permitted on a limited basis with the written approval of the graduate dean of each institution. A current list of such dually listed courses shall be maintained by each university.

The course numbering system for Kansas Regents institutions as defined in the Kansas Board of Regents Policy and Procedures Manual, Chapter 2, Section A.2.

Definition of a Credit Hour

{*University Handbook, F115 & 115.1*}

One Credit Hour: the amount of effort required to attain a specific amount of knowledge or skill equivalent to three hours of effort per week for 15 weeks.

- Any combination of contact time and effort outside of class is allowed. A common practice is for one academic hour of credit to be composed of a lecture or class to meet for one hour (50 minutes) per week, with two hours per week of outside assignment and study effort expected each week for 15 weeks.
- A laboratory class period equivalent to an academic hour of credit would either meet for one three-hour period each week for 15 weeks with all effort by the student expected to be completed during the laboratory period; or one two-hour laboratory period with one hour of student effort expected outside the class period, each week for 15 weeks.
- Shortened academic sessions (including condensed semesters, intersession classes, or summer classes) and all other modalities (online, distance, etc.) are expected to maintain an equivalent amount of time (contact and outside of class time) as those classes in the 15-week semester.

It should be noted that the judgment of the amount of academic effort that comprises one hour of credit for any class is ultimately a faculty decision, from the development of the course syllabus to the approval through Faculty Senate. Additional time outside of class may be required for graduate coursework. For further detail please refer to the Course Scheduling in the Department Head's manual. {FS 2/14/12}

One-Half Credit Hour: the amount of effort required to attain a specific amount of knowledge or skill equivalent to 22.5 hours of effort.

- Any combination of contact time and effort outside of class is allowed.
- Academic sessions, including full or condensed semesters, intersession classes, summer classes, or other defined periods of time, as well as all other modalities (e.g., online, distance, etc.), are expected to maintain an equivalent amount of time (contact and outside of class time).

It should be noted that the judgment of the amount of academic effort that comprises a one-half hour of credit for any class is ultimately a faculty decision, from the development of the course syllabus to the approval through Faculty Senate. Additional time outside of class may be required for graduate coursework.

Additional Course Information

Additional Course Information

passed by Faculty Senate on June 14, 2022

Cross-listed Course(s):

Cross-listing is an administrative way for two or more academic units to share responsibility for a single course. The same course is offered collaboratively by *two or more academic units* and identified by the *same course hundred level (i.e. both 2xx, 3xx, etc.)*, *course name*, *course description*, *K-State 8 tags*, and *learning objectives*. Cross-listed courses are combined in the course catalog and when scheduled in KSIS and are subject to the retake policy as repeated courses.

Cross-listed courses must be identical in every way, apart from the subject code (prefix) and course number, and should only be created as a benefit to students. If a course is important to students in another program, that alone is not a valid reason for cross-listing as this can be handled in other ways within the curriculum. Cross-listing is not meant to be used for combining or merging (for purposes of getting one section in CANVAS) the same course taught by the same

faculty member into one section (i.e., four sections of ENGL *101 being rolled into one CANVAS section). Trying to do this presents problems with faculty load, enrollment numbers, and reporting.

Dual-Listed Course(s):

The same course is offered by *the same academic units* and is identified typically by the *same course name*, but with different course prefixes, numbers, and levels. Each course should have clear learning outcomes that address the differences in the course level combinations, between an undergraduate/graduate course combination or master/doctoral course combination.

These courses are typically for undergraduate/graduate combinations and do not typically deviate from more than one course (hundred) level as defined by KBOR (e.g., 500/600 or 600/700) or for master/doctoral combinations (e.g., 700/800 or 800/900). Justification must be provided for deviations of more than one-course description level.

Combined, Co-Convened Course(s):

The temporary linking of one or more separate courses that are independent of each other but are combined into one class offering (same time/day and Facility ID) for administrative convenience. Co-Convened courses will have a similar course title and can be used for dual offerings of the same course (both undergraduate and graduate) or courses within different subject areas.

These courses are typically smaller cohorts of students in similar courses by topics but will vary in course level. The academic department is maximizing teaching and space resources by co-convening the course into a common day/time and space offering to ensure maximum utilization of a studio or lab space. Each course offering that is taught in a co-convened manner is independent of the other and has clear learning outcomes that address the specific course level.

Equivalent Course(s):

Courses offered by *one or more academic units* with different course numbers and course names may have a similar or different course prefix. Equivalent substitute courses are noted in the catalog that they cannot be taken for credit if credit has been received in specified equivalent course(s). Equivalent courses are subject to the retake policy as repeated courses.

Enrollment Status

Enrollment Definition

Enrollment is defined as consisting of three major components:

Application: Students provide the information requested by the University for purposes of establishing and administering academic and financial relationships that exist between the University and its students.

Registration: Students register for a course(s) and provide the information needed to assess fees and tuition.

Payment of Fees: Students must pay all assessed tuition and other special fees and satisfy all due and/or delinquent amounts payable to the University.

Students who withdraw will be considered no longer enrolled at the time of withdrawal.

Certification of Enrollment

Kansas State University reports enrollment status based on the definitions listed below. Information on enrollment is reported through the National Student Clearinghouse (NSC) and is available for the semester beginning the first week of classes.

- Students participating in internships are not automatically considered full-time for the semester of their internship. The number of hours for an internship is based on the credit hours granted for the internship.
- Non-degree students' enrollment status is reported based on the level (i.e. undergraduate, graduate, etc...) of the non-degree program.
- Students enrolled in a dissertation, thesis, or Co-op (cooperative education experiences) are considered full-time regardless of the hours enrolled {FSA Handbook, pg. 19}.
- Students who withdraw are not considered enrolled in the course once the withdrawal has been processed, and the enrollment status will be adjusted and reported as of that time.
- Students receiving Financial Aid should confirm the requirements for financial aid eligibility.

The following tables detail the credit hours that are used to verify full-time, three-quarter time, and half-time enrollment status for students at Kansas State University. Credit hours can be any combination of undergraduate, graduate, and veterinary medicine credit.

<i>Fall/Spring Terms</i>				
Status	# of Undergraduate term units	# of Graduate term units	# of Grad Assist (0.4-0.9) term units	# of Vet Med term units
Full Time	12 or more	9 or more	6 or more	9 or more
Three Quarter Time	9-11	7-8	5	7-8
Half Time	6-8	5-6	3-4	5-6
Less Than Half Time	1-5	1-4	1-2	1-4

<i>Summer term</i>				
Status	# of Undergraduate term units	# of Graduate term units	# of Grad Assist (0.4-0.9) term units	# of Vet Med term units
Full Time	12 or more	6 or more	1 or more	9 or more
Three Quarter Time	9-11	5	-	7-8
Half Time	6-8	3-4	-	5-6
Less Than Half Time	1-5	1-2	-	1-4

Revised: 10/9/2019

- Undergraduate Student-Veterans receiving V.A. Educational Benefits enrolled in a (non-standard) part of the term will have their training time determined by the Veteran Affairs Administration.

- Graduate Student-Veterans receiving V.A. Educational Benefits enrolled in a (non-standard) part of the term will have their training time reported according to the length of a session as defined by the Veteran Affairs Administration.

Classification of Students

Classification of students {*University Handbook, F40*}. A student who is a high school graduate, or who offers 15 acceptable units of high school work, is classified as a freshman. A student is advanced to a higher classification upon successful university completion of sufficient credit hours as listed below:

Undergraduate Student Classification:

0-29 credit hours	Freshman
30-59 credit hours	Sophomore
60-89 credit hours	Junior
90-119 credit hours	Senior
120+ credit hours	5th Year Senior

Graduate and Veterinary Medicine Student Classification:

Graduate	Masters
Graduate	EDD
Graduate	PHD
Special	1 st Year Veterinary Medicine
Special	2 nd Year Veterinary Medicine
Special	3 rd Year Veterinary Medicine
Special	4 th Year Veterinary Medicine

Examinations

University Handbook, F70-74

Semester final examinations are scheduled by the Committee on Academic Policy and Procedures. Once the final examination time for a course is published in the Course Schedule it may be changed only with the concurrence of the Provost and Executive Vice President. Faculty members may assign take-home examinations, projects, papers, or other media in lieu of a written final examination. In such instances, the deadline for the submittal of the alternative

assessment may not be earlier than the end of the scheduled final examination period for the course. Course schedules can be found on the university's academics website.

Except for honors, problems, seminars, reports, research, laboratory practical, language, 8-week evening college, studio, and fine arts performance classes, the last examination (either unit or comprehensive) must be given during the final examination period. No examination (unit or final) may be scheduled seven calendar days prior to the first scheduled day of semester examinations. (FSM 5/13/03)

Faculty members may not give the final examination at a time other than that published in the class schedule. The final examination may be given to an individual student under special circumstances at another time during final examinations. In particular, students who have more than two examinations scheduled in a 24-clock hour period (a 24-hour period starting at any time) and students who have conflicting exam times may petition the instructor(s) of the highest numbered non-group exam course(s) and schedule an alternate time for taking the final examination(s) at some other time during final examinations. If a student is unable to arrange the necessary rescheduling through the instructors involved, then the dean will resolve the overload problem, if all the scheduled examinations are within the same college. If the examinations in question are within the jurisdiction of different colleges, decisions regarding rescheduling shall be made by the Provost and Executive Vice President. (FS 2/12/08, revised)

University-sponsored events, on- and off-campus (such as extracurricular events, social activities, athletic events, and field trips) shall not be scheduled between 24 hours before the first scheduled final examination and the end of the last scheduled final examination. In addition, off-campus events shall not be scheduled to prohibit a student from being on campus between 24 hours before the first scheduled final examination and the end of the last scheduled final examination.

Exceptions to the scheduling restrictions for university events can be made under the following conditions:

- Approval for events must be obtained from the Provost and Executive Vice President and President of the Faculty Senate.
- For events scheduled well in advance, approval must be obtained at least 18 weeks in advance.
- Consideration may be given to approval of events whose scheduling is not known as long as 18 weeks in advance.
- Students who plan to participate in approved events that conflict with final examinations may obtain from the Office of the Provost and Executive Vice
- Present a statement certifying their participation in the event. Faculty may choose to make special arrangements for final examinations for students who are involved in such approved events.

Master's Student

{Graduate Handbook, Chapter 2, Section J}

Nature

A culminating experience is required to earn a master's degree. The culminating experience should verify the student's competence to synthesize information across the student's program of study. The culminating experience will occur after the student has completed the program of study and other requirements or during the term in which the candidate intends to complete them. The Supervisory Committee is responsible for administering the culminating experience and must include at least 3 graduate faculty members. The majority of the Supervisory Committee must vote in favor for the student to pass his/her defense (a tie vote is a failure). The major professor is responsible for returning the signed ballot to the Graduate School.

For students pursuing a thesis or report option, the culminating experience shall be a defense of the thesis or report.

For students pursuing a coursework only degree, the experience may be an interpretation of scholarly work, a test of the student's understanding of the field or other culminating experiences. It is the responsibility of the academic unit to provide culminating experience guidelines for each coursework-only master's degree that the department offers. Examples could include concerts, portfolios, final written or oral examinations, case studies, or whatever the program deems appropriate.

Scheduling

In the case of a candidate writing a thesis or report, the examination cannot be scheduled until the supervisory committee certifies that a satisfactory copy of the thesis or report has been presented. The candidate must file with the Graduate School an Approval for Final Examination Form signed by each member of the committee. By signing this form, the faculty member indicates only that the form of the thesis or report is acceptable for review and that a final examination may be scheduled. Signing does not imply that the content of the thesis or report is satisfactory. When the examination has been scheduled, the Graduate School will send a final examination ballot and an ETDR ballot to the major professor and notify in writing all members of the committee regarding the time and place.

Final examinations should also be scheduled so as to give the supervisory committee at least two weeks to review the thesis.

Failure and Repetition

At least 2/3 of the supervisory committee must approve the candidate's performance before he or she is deemed to have passed the final examination. A refusal to vote by the major professor or any member of the supervisory committee shall be recorded as a negative vote. With permission of at least 2/3 of the supervisory committee, a candidate who fails a master's examination may take a second examination no sooner than two months nor later than 15 months after the failure, unless an extension is granted by the Dean of the Graduate School. A third defense is not allowed.

At least 2/3 of the members of the supervisory committee must sign the final ETDR before the ballot can be processed and the thesis or report submitted to K-REX.

Competency Revalidation of Courses

If a student's program of study includes any course credits more than six years old at the time the student is about to complete all degree requirements, the final master's examination will normally include an examination over the body of course work listed on the program of study.

The form and content of this competency examination is determined by each master's program which may impose additional requirements for revalidating the student's competency in the supporting course work. In a master's program for which such a revalidation examination may be inappropriate, an exception to this policy may be sought from the Dean of the Graduate School.

Doctoral Student:

{Graduate Handbook, Chapter 3, Section I and Section L}

Preliminary Examination

A student must be in good academic standing to take a preliminary examination. The required written preliminary examination may be supplemented by an oral examination as prescribed by the supervisory committee. These are designed to test the student's breadth and depth of knowledge in the proposed field of specialization, as well as the student's ability to explore problems on the boundaries of knowledge. Satisfactory performance in the examination is an indication that the student is prepared to perform independent work toward the doctoral degree and results in the

student being classified as a doctoral candidate upon affirmative recommendation by the supervisory committee. The examination may be scheduled after the program of study is filed and at a time deemed appropriate by the supervisory committee. The preliminary examination must be completed at least 7 months before the final oral examination.

Once the supervisory committee and the student decide when the examination is to be taken, the student should notify the Graduate School one month before the scheduled date. A ballot is sent to the major professor by the Graduate School. Copies of the examination are filed with the academic unit and made available on request to any graduate faculty member for a period of two years from the date of examination. Students must enroll in at least one credit hour during any and all semesters in which they are actively engaged in the preliminary examination process.

The results of the preliminary examination are indicated on the ballot by the signatures of those members of the departmental or program examining committee responsible for administration and grading of the examination. The format of the examination and the structure of the examining committee may differ among doctoral programs, and in some programs, the examining committee will differ from the supervisory committee. Within one week following the completion and determination of the results of the preliminary examination, including those of any oral portion, the supervisory committee must sign the ballot indicating that the preliminary examination has been completed and recommending approval or disapproval of the student's admission to candidacy for the doctoral degree. The student is considered to have passed the examination and to be recommended to candidacy if at least three fourths of the supervisory committee voted to approve candidacy.

In case of failure of the first preliminary examination, the supervisory committee may approve a second examination with no more than one dissenting vote. A second examination can be taken no sooner than three months following the initial failure. Once the supervisory committee and the student decide when the second examination is to be taken, the student should notify the Graduate School one month before the scheduled date. The composition of the supervisory committee shall not be changed before a final decision is reached on admission to candidacy. A second failure constitutes denial of admission to candidacy for the doctoral degree in the field of study of the graduate program. As with the first examination, the signed ballot must be returned to the Graduate School within one week of the determination of the results of the examination.

Grades

Grading System

Per the *University Handbook*, F80-82 - grades will be reported in the following manner:

Grade	Description	Grade Point
A	Excellent Work	4.00
B	Good Work	3.00
C	Fair Work	2.00
D	Poor Work	1.00
F	Failure	0.00
XF	Honor Code Violation	0.00

EP	Exam Pass of Standardized National Exams	N/A
I	Incomplete	N/A
IH	Incomplete Hold	N/A
NH	Non-reported Hold	N/A
P	Grades of B, C, or D in course taken A/Pass/F courses	N/A
CR	Credit in courses for which no letter grade is given (non-graded courses)	N/A
NC	No credit in courses for which no letter grade is given (non-graded courses)	N/A
NR	No Grade Reported	N/A
W	Withdrawn	N/A

Grade points are assigned to determine graduation requirements, academic warning and dismissal levels, and scholastic honors.

Beginning in Spring 2012, all grades of 'F' (Fail) and/or 'NC' (No Credit) will require a "Yes/No" statement as to the student's participation in Academically related activities. This statement is required due to the federal mandate regarding the issuance of federal financial aid.

Grade changes are submitted directly to the student information system (KSIS). Grade Change Rosters will remain open for five years from the original posting date to submit changes. On-line changes to certain grades such as 'W' and 'XF' will not be allowed, nor to grades related to a completed program of a graduated student. Any changes not accommodated by KSIS must be handled by submitting a Grade Change Memorandum form to the Dean of the College.

Courses in which a 'CR' or 'P' grade is received may be used in fulfilling graduation requirements. Only the grades 'A', 'B', 'C', 'D', and 'F' are used in calculating resident grade averages.

Grade Point Average (GPA) Types

Definitions of GPA Types and Calculating the Grade Point Average - refer to Grade Point Average (GPA) Types for additional information.

Incomplete Grade Policy

{University Handbook, F83}

The instructor will make an appropriate report on any student who does not complete a course in accordance with these definitions:

- If a drop in a full-semester course occurs in the first 36 calendar days, no grade is reported. The deadline for other courses will be pro-rated based on the course length.
- If a student drops a full-semester course after the first 36 calendar days, but before the start of the eleventh week, a withdrawal (W) is reported. The deadline for other courses will be pro-rated based on course length. See the Office of the Registrar website for details.
- After the tenth week of classes, a course may not be dropped.

- The grade of incomplete is a temporary grade given at the discretion of the faculty upon request of the student. An incomplete grade is appropriate when verifiable circumstances beyond the student's control prevent completion of course requirements by the grade submission deadline, and the student was engaged and participating in the class prior to the circumstances that prevented completion of course requirements. The grade of incomplete is not to be used to avoid assigning a poor grade that results from unsatisfactory academic work.

In most instances, the requirements for completion of a course are detailed in the original course syllabus. It is in the student's best interest to confirm in writing with the faculty member the remaining requirements to be completed in order to replace the grade of incomplete. If the faculty member requires anything other than the syllabus requirements or chooses to have a time frame for completion other than the end of the next regular term, the faculty member must provide written notification to the student. A sample notification form is available on the Office of the Registrar's website. Typically, requiring student participation in the entire course in a subsequent semester without enrolling is not an appropriate means to satisfy requirements for the incomplete.

Incompletes are expected to be finished by the conclusion of the next regular academic term (fall or spring), or the student's graduation term – whichever is earlier. Any incomplete remaining after the next regular term is reassigned to an 'F' (regardless of student's enrollment status) and will be computed in the student's GPA, weighted at 0.000-grade points per credit. In extreme cases, a student may be granted an extension of an incomplete beyond the next regular term. To request such an extension, the student must complete with appropriate signatures the Incomplete Extension Request Form.

Undergraduate research courses, internship courses, theses, dissertations, directed research courses, and other courses with the 'IH' grading option are exempt from the one regular term limit for completion.

A student with incompletes will only be cleared for graduation if receiving 'F's in every incomplete class earned in Fall 2018 or later will satisfy the requirements for graduation. Upon approval for graduation, all grades of incomplete earned Fall 2018 or later remaining on the record will be changed to grades of 'F'.

Auditing

Auditing is participating in a class regularly without submitting classwork and without receiving credit. Permission to audit is granted by the instructor, with the approval of the dean of the college in which the class is offered. Laboratory and activity courses may not be audited. Audits are not recorded on the permanent record. Students should not enroll in courses they plan to audit. {*University Handbook, Section F66.1*}

Any Kansas resident 60 years of age or older upon the presentation of sufficient proof of age shall be permitted to audit courses at state universities on a space-available basis with no requirement for payment of tuition and fees required of every student as a condition of enrollment. A person meeting these requirements shall be considered a non-degree seeking student for purposes of K.A.R. Articles 88-29, 29a, and 29b. Special academic fees shall be paid by the student. All determinations as to residency, the age of the applicant, and the space available for the auditing of courses by such persons shall be made by the state university involved. {*University Handbook, Section F66.2*} - For more information, see the Kansas Board of Regents Policy Manual.

Non-Permissible Changes to the Academic Record after Degree Posting

Grade changes may not be made after a degree has been posted, for courses taken prior to that degree posting. In addition, backdated withdrawals will not be processed after a degree has been posted, for any term prior to that degree posting.

'A'/Pass/Fail Policy

Per the *University Handbook, F91-93*, Undergraduate students, except first-term freshmen and students on academic warning, may enroll in certain courses for which they have the normal prerequisites under the 'A'/Pass/Fail grading

option. Under this option, students earning a grade of 'A' in a course will have an 'A' recorded on the transcript for that course; a grade of 'B', 'C', or 'D' will be recorded as Pass; a Grade of 'F' will be recorded as 'F'.

Students may request the 'A'/Pass/Fail grading option for eligible courses at the time of enrollment through the third and fourth weeks of each regular semester or during the second week of the summer semester. Deadlines for courses running on other calendars (e.g. intersession) will be prorated. Students requesting the use of the 'A'/Pass/Fail option must obtain the signature of their advisors. The decision by a student to use the 'A'/Pass/Fail option is treated with strict confidentiality.

It is the responsibility of a student requesting enrollment under the 'A'/Pass/Fail grading option to be sure that such enrollment is valid in the declared degree program. A course originally completed under the 'A'/Pass/Fail grading option may not be converted at any time to a graded basis.

Students should be aware that some institutions, scholarship committees, and honorary societies do not find work taken on a non-graded basis (Pass) acceptable. Furthermore, many employers do not view non-graded (Pass) coursework favorably. All students should be cautious in using the 'A'/Pass/Fail grading option.

Each department or division may specify which courses its majors may take under the 'A'/Pass/Fail grading option consistent with the university requirements listed below.

1. Students may enroll under the 'A'/Pass/Fail option for any free elective course offered under this option. Courses that are specified by name or number and courses that meet general distribution requirements are not considered free electives. Students should not choose this option for any course related to their curriculum.
2. Students may enroll under the 'A'/Pass/Fail option for any general distribution requirement offered under this option, provided that the course is in the upper-division level (300 and above). General distribution requirements consist of those courses which are listed by areas, for example, three courses in the humanities.
3. Students may not enroll under the 'A'/Pass/Fail option in any course that is required by name or number as part of their degree programs. It is the responsibility of students requesting enrollment under the 'A'/Pass/Fail option to be sure that such enrollment is valid in their degree program.
4. A course originally completed under the 'A'/Pass/Fail option may only be converted to a graded basis with the consent of the instructor and academic dean.
5. Undergraduate students may submit Pass hours for graduation requirements up to and not exceeding one-sixth of the total number of hours required for a bachelor's degree.
6. Students may request the 'A'/Pass/Fail option for eligible courses at the time of enrollment through the third and fourth weeks of each regular semester or during the second week of the summer semester. Deadlines for courses running on other calendars (e.g. intersession) will be pro-rated.
7. Students requesting the use of the 'A'/Pass/Fail option must obtain their advisor's signature. The decision by a student to use the 'A'/Pass/Fail option is treated with strict confidentiality.

A student may enroll under the 'A'/Pass/Fail option for any free elective course offered under this option, that is, in any course that is in no way specified even in general terms in their curriculum, secondary major, or minor. Courses that are specified by name or number and courses that meet general distribution requirements and courses to be applied in a secondary major or minor are not considered free electives.

Students may submit Pass units for graduation requirements up to and not exceeding one-sixth of the total number of units required for a bachelor's degree (e.g. one-sixth would be no more than 20 credit hours of a 120 credit hour bachelor's degree program). That is, five-sixths of all units submitted for the degree must be units submitted on a graded or credit basis.

Undergraduate Retake Policy

Students may retake courses in order to improve the grade. If a course is retaken, the original grade is noted as retaken and removed from the cumulative grade point average. Retakes can be accomplished only by re-enrolling in and completing a Kansas State University course.

Courses originally taken on a letter grade basis may be retaken on an 'A/Pass/Fail basis if appropriate, or if originally taken on an 'A/Pass/Fail basis may be retaken on a letter-grade basis. The retake grade will always be used in the cumulative grade point average computation regardless of whether it is higher or lower than the original grade. The original course remains on the academic record.

Although there is no limit to the number of times a course may be retaken, a student may retake a course with subsequent removal of the prior grade from the calculation of the grade point only once for each course, and only for the first five retaken courses during the student's academic career at K-State.

Any grades obtained from retaking courses beyond these limitations will be used in calculating the cumulative grade point average. A retaken course will count only once toward meeting degree requirements.

Any course retaken after completion of a bachelor's degree will not affect the credits or the GPA applied to that degree. {*University Handbook, F65.1*}

Courses that were retaken before Fall 1986 are not able to be used in determining whether five courses have been retaken.

Academic Fresh Start and Academic Forgiveness

The **Academic Fresh Start** and **Academic Forgiveness** Policies enable an undergraduate student to neutralize, in part, the grade impact of prior academic performance. **Academic Fresh Start** and **Academic Forgiveness** provide for the computation of an alternative GPA and for the use of that GPA in most academic situations. A student may apply only once, and to only one or the other, and the process cannot be reversed. A student may not apply for either policy until he or she has been reinstated into his or her college. To read the policy in its entirety refer to the *University Handbook, F104 - Academic Fresh Start, and Academic Forgiveness GPA Policies*.

Credit and Grades

Total units, including Pre-Academic Fresh Start, transfer work accepted, K-State resident graded units attempted and miscellaneous units completed establish the level for academic warning and dismissal calculation. However, transfer units and grades are not computed in K-State grade point averages.

The following definitions are used when determining a student's scholastic deficiency:

1. Credit hours used to determine Total Hours Accumulated will include transfer hours accepted, all K-State graded hours, and miscellaneous hours completed.
2. Grades used in calculating term and cumulative grade point averages will include only K-State graded hours. Grades for courses accepted in transfer from another institution will not be used in the grade point average calculation.

Release of Grades

A student's grades may be accessed only by the student through KSIS or by ordering an academic transcript. {*University Handbook, F43*}

Report of Grades

Academic progress reports for new freshmen are available in KSIS to students and deans' offices approximately six weeks into the spring and fall semesters.

The instructor reports final term grades, based on examinations and course work, to the Office of the Registrar via the KSIS grade roster.

In case of absence from the final examination, the instructor reports a mark of 'I' for incomplete or computes the grade on the basis of zero for the final examination. If an Incomplete is reported, a reasonable time, usually not over one month, is allowed in which to take the examination.

Grade Appeals/Grievances

Grievances involving a change of grade (but not academic dishonesty). {*University Handbook, Appendix V: 1.3*}

1. All efforts will be made by the student and instructor involved in any grievance to settle all disputes that may arise. Grade appeals must be initiated within six months following the issue date of the grade in question.
2. If a grade-change grievance is not resolved by the student and instructor, the student may appeal in writing to the department head concerned, who will act as a mediator in the dispute. This appeal should be made within two weeks of the date of the decision of the instructor. At this time, the student may petition the dean of his college for an ombudsperson. The duties of the ombudsperson are to arrange meetings of all concerned parties and report actions taken at each level to the appropriate persons or groups. The role of the ombudsperson is to expedite the process and to ensure a fair hearing.
3. If the grievance has not been settled to the student's satisfaction at the department level, a written appeal may be made to the dean of the college in which the course is taken. This appeal should be made within two weeks of the date of the decision of the department head.
4. If the student does not feel that an adequate solution has been reached in the grade appeal dispute, he or she may appeal in writing to the Undergraduate Grievance Board which will arbitrate the dispute. This appeal should be made within two weeks of the date of the decision of the dean. Appeals received during the summer will be heard the following fall term. Appeals should be addressed to the Undergraduate Grievance Board, c/o Chair (look for the name of the Chair for Committee 3030 at <http://www.ksu.edu/provost/committeehb/>).
5. The two-week time limits given in the sections above are intended to move the grievance process along at a reasonable rate. The limits may be modified for reasons such as illness, scheduled academic holidays, or mutual consent of both parties.

GPA Types

Grades: GPA Types

All GPA types listed below are reflected in the student's academic record. **K-State GPAs are rounded to the 3rd decimal place.**

Term GPA:

The term GPA is the sum of all quality points earned for KSU courses divided by the number of all KSU hours attempted in a specific term/semester (except those hours with grades of CR, I, IH, P, NC, NR, NH or W, and KSU hours repeated for which the retake policy or academic fresh start and academic forgiveness policy was subsequently invoked). The resulting quotient is the term GPA.

Overall Cumulative GPA:

The overall cumulative GPA is the sum of all quality points earned at KSU divided by the number of all KSU hours attempted (except those hours with grades of CR, I, IH, P, NC, NR, NH, or W, and KSU hours repeated for which the retake policy or academic fresh start and academic forgiveness policy was subsequently invoked). The resulting quotient is the overall cumulative GPA.

Grade Point Averaging and Deficits

The term *average* refers to the grade point average (GPA) for work completed in the current or most recent academic program attended at Kansas State University. Grades received at other institutions are NOT averaged with grades received at K-State for the purpose of meeting the **university/institutional cumulative GPA** requirements. Other agencies and honorary societies will compute averages in accordance with their own standards and policies.

Averages are determined by computing the ratio of grade points to semester credits attempted. For the grade point average computation formula, please refer to the example below.

Calculating the Grade Point Average

Grade Point Averages (GPA) are calculated by dividing the total number of Grade Points by the number of Credit Hours enrolled. Each grade has a specific number of points assigned to it:

A: 4.000
B: 3.000
C: 2.000
D: 1.000
F: 0.000

To determine the grade points earned per class, first multiply the points by the number of credit hours.

For example: if you earned a "C" in ENGL 251 (a 3 credit hour course), then you multiply 2 points times 3 credit hours to get 6-grade points.

To determine the total grade points earned per semester, determine the points for each class and add them together for the **total grade points** that semester.

Example: If you enrolled in 13 credit hours (three 3-hour courses and one 4-hour course), and earned a "B", a "C", an "A" in the 3-hour courses, and a "D" in the 4-hour course this is how you would calculate your total grade points:

*A = 4 points * 3 credit hours = 12 grade points*

*B = 3 points * 3 credit hours = 9 grade points*

*C = 2 points * 3 credit hours = 6 grade points*

*D = 1 point * 4 credit hours = 4 grade points*

Total: 13 credit hours = 31 grade points

To determine your grade point average, divide the total grade points by the total credit hours under consideration. From the example above: **Divide 31-grade points by the 13 credit hours to equal a 2.380 GPA.**

Special Notes:

Grades of CR (Credit Awarded), I (Incomplete), IH (Incomplete Hold), P (Pass), NC (No Credit Awarded), NH (Non-Reported Hold), NR (No Grade Reported), or W (Withdrawn) do not impact your GPA. Do not include the credit hours for these courses in your credit hour total for calculating GPA.

A grade of F and XF is equal to 0.000 points.

* Unresolved Incomplete grades automatically will be changed to 'F' per the Incomplete Grade Policy via processes run within the Office of the Registrar.

Registration

Assignment of Classes

In addition to consulting with their advisor, students should be familiar with the current undergraduate and graduate catalogs regarding assignments and curricula. The catalogs are the official source of information and are maintained on the university's academics website. {*University Handbook, F8*}

Registration

{*Graduate Handbook, Chapter 1, section D*}

Students who have been admitted to Graduate School must register and pay their fees during the regular registration periods. Changes in enrollment must be approved by an advisor and the Dean of the Graduate School.

All graduate students who have matriculated at Kansas State University and are using faculty time or University facilities for research or other academic pursuits must be enrolled. Enrollment is defined as at least one credit hour and should reflect, as accurately as possible, the demands made on faculty time and the use made of University facilities. Further, a graduate degree candidate must be enrolled during the semester in which the degree requirements are completed.

University Handbook, F10-F12

Students may not attend classes without being properly registered for them, they cannot receive credit for courses in which they are not registered, and students may not register or add individual courses retroactively without approval and within appropriate deadlines. For more information visit the Office of the Registrar website.

Registration and assignment to classes take place on specific dates as shown on the academic calendar. No student may add a full-semester course after the seventh calendar day of the semester without the permission of the instructor. Students should enroll during the regularly scheduled registration periods in order to avoid late fees. More registration details, including dates for classes that run less than a full semester, can be found on the Office of the Registrar's website.

Dropping and Adding Courses; Changing Colleges; Withdrawing from the University

University Handbook, F64.1 to F64.7

During the regular session, if a student wants to drop or add a course or if an instructor recommends a change, the student should confer with an advisor.

No student may add a course with 70 or more calendar days (10 or more weeks in length) after the 7th calendar day of classes without the consent of the instructor.

An instructor may drop a student from any or all components (e.g., lecture, recitation, lab, etc.) of a course if the student is absent at the beginning of the first class period of any component of the course. Students who cannot be in attendance should arrange prior permission from the instructor in order to avoid being dropped. For purposes of this

procedure, enrollment in and payment of fees for a course do not constitute sufficient notification of intent to take a course.

The last day for dropping courses with 70 or more calendar days (10 or more weeks in length), without a "W" being recorded is at the 36th calendar day of the term. After the 68th calendar day of the term, courses may not be dropped. For courses less than 70 days (10 or more weeks in length), the drop dates are prorated. For more information see the Academic Policy.

A student may transfer from one college to another with permission from the dean or the dean's representative of the college into which the student proposes to transfer. For more information see the Academic Policy.

Students who decide to withdraw from Kansas State University must begin the official withdrawal process at the dean's office of their college. Note that dropping all classes requires withdrawing. For more information see Dropping All Classes or Withdrawing from K-State.

If a student withdraws during the first 36 calendar days of a 70 or more calendar day course (approximately 10 or more weeks in length), no mark will be recorded on the student's transcript. Thereafter, a mark of "W" is recorded; a course less than 70 calendar days (approximately 10 or more weeks in length), is prorated. The deadline for withdrawing is the end of the 68th calendar day of the term; for a course less than 70 calendar days (approximately 10 or more weeks in length), the withdrawal date is prorated.

Retake Policy

{Graduate Handbook, Chapter 2, section E.4 and Chapter 3, section E.4}

If the student received less than 3.0 in a course, the student may retake the course with the approval of the major professor and the supervisory committee. If the course is retaken by the direction of the major professor and the supervisory committee, the original grade is noted as retaken and removed from the grade point average. The retake grade will always be used in computing the grade point average regardless of whether it is higher or lower than the original grade. A student may retake a course with subsequent removal of the prior grade only once for each course and for a total of two courses in the program of study. An approved program of study must be on file in the Graduate School at the time the retake request is submitted. Retake requests must be made prior to enrolling in the course.

Scholastic Honors

Student Records

University Handbook, F41-42 & F44

FERPA

Kansas State University is in compliance with the Family Educational Rights and Privacy Act (FERPA) of 1974, as amended; this law established specific guidelines concerning the release of information and the student's privileges to inspect and review their own educational records. The Kansas State University student records policy can be found on the Registrar's website. For additional information about student records see Student Confidentiality.

Directory Information

Certain information concerning students is considered to be open to the public upon inquiry. This public information is called directory information. See the Student Records Policy.

Full Confidentiality Hold

In rare cases, a student may need additional privacy protection that is not covered in suppressing their directory information (see Directory Information section above). If a student elects to place a Full Confidentiality Hold on their record, it means that the student's entire educational record will be suppressed and that they will not be able to discuss any part of their educational record with K-State staff remotely (telephone, FAX, or regular mail) but instead will have elected to have all conversations about their educational record in person or via their K-State email only.

It is important to remember that by choosing this option or withholding Directory Information above, other areas related to the student record may be affected. Some of these areas include but are not limited to, all future requests for Directory Information from non-institutional persons or organizations will be denied; degree or enrollment verifications for future employment through the National Student Clearinghouse will not be available; etc.

Restriction of Records

In the case of a student who is delinquent in an account to the university, including unpaid traffic or parking violations, or about whom official disciplinary action has been taken, the appropriate university official may request that the student's record not be released. The effect of this action is that transcripts are not released, and registration forms are withheld. In order for the action to be rescinded, the hold must be cleared via KSIS, indicating that the student has met the obligation. For more information about when records may be withheld, see the Student Records Policy.

Death of a Student

In accordance with the Family Educational Rights and Privacy Act (FERPA), Kansas State University's policy regarding the disposition of records held pertaining to a deceased student states that the privacy interests of an individual expire with that individual's death.

Glossary and Abbreviations

A/Pass/F: A grading option in which a student earning a grade of A in a course will have an A recorded for that course; a grade of B, C, or D will be recorded as a Pass; and a grade of F will be recorded as an F.

Academic good standing: (as displayed on enrollment verification form)

- YES = Student is in good standing; eligible to re-enroll; not dismissed
- NO = Student is not in good standing; not eligible to re-enroll; dismissed

Academic load: The total number of credit hours enrolled in during one term.

Academic warning: (Warning) An indication that a student is in academic difficulty which could lead to dismissal from the university.

Add/Drop: Changing the student's course schedule by adding and/or dropping a course.

Advanced standing: Having credit awarded for previous work or testing.

Advisor: A department or college-based faculty member who helps a student achieve her or his educational goals by providing guidance on courses, program requirements, prerequisites, programs of study, and policies and procedures.

Audit: Auditing is participating in a class regularly without submitting class work and without receiving credit.
{University Handbook, F66.1-F66.2}

B.A. degree: (Bachelor of Arts) Courses selected from a variety of disciplines with concentrations in one or two areas. A modern language is required for a B.A. degree.

B.S. degree: (Bachelor of Science) A specified program of required courses with fewer electives than the B.A. A modern language is not required.

Baccalaureate: Refers to the bachelor's degree.

Certificate programs: A non-degree credential designed to provide students with specialized knowledge that is less extensive than, and different from an undergraduate or graduate degree program. A certificate program represents a focused collection of courses that, when completed, affords the student some record of coherent academic accomplishment in a given discipline or set of related disciplines.

Classification: Level of progress toward a degree with classifications of freshman, sophomore, junior, or senior, depending on the number of term hours completed.

College: An academic unit of the university. Kansas State University has nine colleges.

Combined, Co-Convened Course(s): The temporary linking of one or more separate courses that are independent of each other but are combined into one class offering (same time/day and Facility ID) for administrative convenience. Co-Convened courses will have a similar course title and can be used for dual offerings of the same course (both undergraduate and graduate) or courses within different subject areas.

Cooperative education (co-op): The integration of academic experience with planned employment experiences that relate to a student's academic major or career goals. The work experience supplements and complements the curriculum.

Concurrent enrollment: (Conc.) This term usually means the student is enrolled in High School and is taking college credit at the same time.

Course: A unit of study a student enrolls in during a term.

Credit by examination: Credit is received when a student takes an oral or written examination without enrolling in a course.

Credit hour: (Cr.) The amount of effort required to attain a specific amount of knowledge or skill is equivalent to three hours of effort per week for 15 weeks. Any combination of contact time and effort outside of class is allowed
{University Handbook: Section F115}.

Credit/No Credit: (C/NC) A grading option with successful completion of a course recorded as Credit and failure as No Credit. No other grades are given for such courses and they are not figured into the grade point average.

Cross-listed course: Cross-listing is an administrative way for two or more academic units to share responsibility for a single course. The same course is offered collaboratively by *two or more academic units* and identified by the *same course hundred level (i.e. both 2xx, 3xx, etc.), course name, course description, K-State 8 tags, and learning objectives*. Cross-listed courses are combined in the course catalog and when scheduling in KSIS and are subject to the retake policy as repeated courses.

Curriculum: A program of courses that meets the requirements for a degree in a particular field of study, also referred to as a major.

Degree program: Courses required for completion of a particular degree.

Department: A unit within a college representing a discipline.

Discipline: An area of study representing a branch of knowledge, such as mathematics.

Dismissal: (Dismissed) A student who neglects his or her academic responsibilities may be dismissed on the recommendation of an academic dean.

Double major: A double major is two majors in the same degree type being pursued by a student at one time (e.g., B.S. in Mathematics and B.S. in Geography). The requirements for both degrees must be satisfied.

Drop/Add: Changing the student's course schedule by adding and/or dropping a course, or both.

Dual degrees: A dual degree is two unique degree types that a student has elected to pursue at one time (e.g., B.S. in Mathematics and B.S.B.A in Business Administration). The requirements for both degrees must be satisfied.

Dual-listed Courses: The same course is offered by *the same academic units* and is identified typically by the *same course name*, but with different course prefixes, numbers, and levels. Each course should have clear learning outcomes that address the differences in the course level combinations, between an undergraduate/graduate course combination or master/doctoral course combination.

Ed.D.: Doctor of Education degree. A post-baccalaureate degree is awarded upon completion of at least three years of full-time specialized study, together with a major research contribution to the field of education that demonstrates independence as a scholar. The degree culminates with a formal dissertation.

Ed.S.: Education Specialist degree. An Ed.S is an advanced degree for teachers who want to keep working while gaining specialized proficiency in a particular area of interest, such as administrative leadership, education technology, or early childhood.

Electives: Courses chosen by a student that is not required for the major or minor. The number of hours of electives required varies according to a student's major.

Enrollment: The process of selecting course(s) and being enrolled/registered in the course(s).

Equivalent course: (Equiv.) Courses offered by *one or more academic units* with different course numbers and course names and may have a similar or different course prefix. Equivalent substitute courses are noted in the catalog that they cannot be taken for credit if credit has been received in specified equivalent course(s). Equivalent courses are subject to the retake policy as repeated courses.

Extracurricular: Activities such as band or debate for which a student may earn credit toward graduation. Extracurricular activities are counted as electives.

Financial aid: Help available to a student to pay for college. Aid is available from grants, loans, scholarships, and work/study employment.

Grade point average: A measure of a student's academic achievement at a college or university; calculated by dividing the total number of grade points received by the total number attempted.

Graduate student: A student who has completed a bachelor's degree and has met all the requirements for admission to Graduate School.

Interession: Courses offered in-between terms.

K-State 8: Indicates that the course has been approved for the K-State 8 General Education Program which encourages students to be intellectual explorers. Students who first enroll in Summer 2011 or later must meet the requirements of the K-State 8 General Education Program.

Lecture: (Lec.) A course wherein the teaching is done primarily through oration.

M.A.: Master of Arts degree. A post-baccalaureate degree is awarded upon completion of at least 30 term hours of graduate credit, usually in the humanities or social sciences. May or may not include research and a thesis, depending on the field of study.

Major: A program of courses that meets the requirements for a degree in a particular field of study.

Minor: A systematic program of study in an area of emphasis outside a student's major.

M.S.: Master of Science degree. A post-baccalaureate degree is awarded upon completion of at least 30 term hours of graduate credit, usually in the sciences or professions. Research and a thesis are required in most of the sciences.

Non-Degree seeking student: A student taking courses at K-State, but not admitted to a program leading to a degree.

Non-Standard Course: A course that is not scheduled in the full fall/spring scheduling guidelines of a term.

One-Half Credit Hour: The amount of effort required to attain a specific amount of knowledge or skill equivalent to 22.5 hours of effort. Any combination of contact time and effort outside of class is allowed. Academic sessions, including full or condensed semesters, intersession classes, summer classes, or other defined periods of time, are expected to maintain an equivalent amount of time (contact and outside of class time). {University Handbook: Section F115.1}

Option: An approved group of courses creating a specialty within a major field of study.

Orientation: Activities designed to help new students become acquainted with the university.

Ph.D.: Doctor of Philosophy degree. A post-baccalaureate degree is awarded upon completion of at least three years of full-time specialized study, together with a major research contribution to the discipline that demonstrates independence as a scholar. The degree culminates with a formal dissertation.

Prerequisite: (Pr.) A requirement, usually credit in another course, must be met before a particular course can be taken.

Probation: Probation is an academic warning that a student is in academic difficulty which could lead to dismissal from the university.

Recitation: (Rec.) A small section is usually taken in conjunction with a lecture.

Regular Session Course: A course that meets for the first time during the first 7 calendar days of the semester and that has its last class meeting during the final 7 calendar days of the semester.

Repeatable Course: A course that may be taken multiple times without being subject to the retake policy. There may be a credit hour or course count limit associated with a repeatable course.

Scholastic honors: An award an undergraduate receives based on the excellence of K-State academic work.

Secondary major: Interdisciplinary major which must be completed along with a primary major course of study. A secondary field of specialization is an interdisciplinary program of study which is completed in addition to a major. These programs are administered by a director and a supervisory committee of faculty representing the various academic departments offering courses for the secondary major. Secondary majors cannot be earned outside of the completion of the primary major.

Special student: An undergraduate student taking courses at K-State but not regularly enrolled in work toward a degree.

Transcript: An official copy of a student's permanent academic record.

Transfer student: A student who terminates enrollment in another college or university and subsequently enrolls at K-State.

Undergraduate student: A university student who has not received a bachelor's degree.

Variable: (V/Var.) The credits earned in some courses may vary.

Course Description Key

Course Descriptions

The following course description key explains the system used for courses listed throughout the catalog.

Sample undergraduate course description

GEOG 221 - Introductory Physical Geography

Credits: (4)

A basic physical geography course examining the atmosphere, biosphere, geosphere, and hydrosphere, with emphasis on processes, patterns, and physical background.

Note: Three hours of lecture and one two-hour lab a week.

Requisites: Prerequisite: None.

Typically Offered: Fall, Spring, Summer

K-State 8: Empirical and Quantitative Reasoning; Natural and Physical Sciences

Sample graduate course description

GEOG 895 - Topics in Spatial Analysis

Independent advanced study of a selected topic. An example is the use of remote sensing and GIS in environmental modeling.

Credits: 1-3

Requisites: Pr.: Consent of instructor.

Typically Offered: Fall, Spring, Summer

Course number

The letters **GEOG** generally denote the department in which the course is offered (in this case, the Department of Geography).

The three digits of the course number **321** (undergraduate) and **899** (graduate) represent the level of the course (e.g., 100-199 = first year, 200-299 = second year, etc.)

Refer to the Course Level Key in Academic Policies and Procedures within the Credit Section

The number in parentheses (4) indicates the units of credit given for the course.

The **Fall**, **Spring**, **Summer**, and/or **intersession** indicates the semester or semesters, each course is usually offered.

K-State 8 indicates that the course has been approved for the K-State 8 General Education Program which encourages students to be intellectual explorers. Students who first enroll in Summer 2011 or later must meet the requirements of the K-State 8 General Education Program.

The abbreviation **Pr.** indicates prerequisites for the course. In the sample course, students would be required to have completed Environmental Geography I before enrolling. Some courses list **Recommended pr.**, which means a previous course is strongly recommended, although not required.

Some courses may allow or require concurrent or co-requisite enrollment in other courses. This is indicated by the abbreviation **Conc.**

Courses

AAI 301 - Career Readiness for Applied and Technical Professions

Credits 3

This course will allow students to synthesize career and academic opportunities related to their technical coursework into viable career pathways. Exploration of career interests and values will be accomplished through selected assessments, applied learning projects, and online resources. Identification of defined academic and career pathways are curated through evaluation, decision-making, and defining short and long-term career goals. Since the course is foundational for the degree completion program in Applied and Interdisciplinary Studies, it is assumed that a student will already have completed 30 credit hours or an associate's degree completed.

Repeat for Credit

N

Requisites

Requisite: Completed 30 Hours of Undergraduate Coursework and enrolled as an Applied and Interdisciplinary Studies student (AIS)

Typically Offered

Fall or Spring

AAI 395 - Undergraduate Topics in Applied and Interdisciplinary Studies

Credits .5-3

Selected undergraduate topics in applied and interdisciplinary studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 495 - Undergraduate Special Topics in Applied and Interdisciplinary Studies

Credits .5-3

Special Topics in Applied and Interdisciplinary Studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 501 - Internship in Applied and Interdisciplinary Studies

Credits 3

This internship course provides students in interdisciplinary fields with hands-on experience in a professional setting. Students are responsible for finding their own internship site(s) prior to enrolling in the course. The course includes reflections and discussions where students can share their experiences and insights by integrating their academic knowledge with practical application.

Note

Required of all Applied and Interdisciplinary Studies Majors.

Repeat for Credit

Y

Requisites

Students should have senior standing and have completed AAI 301: Career Readiness for Applied and Technical Professionals. Permission to enroll will be granted when the student has verified an internship location has been secured.

Typically Offered

Fall, Spring, Summer

AAI 502 - Applied Studies Seminar

Credits 3

This applied studies seminar is designed to bridge the gap between undergraduate academic experiences and the professional world. Students will connect their research, writing, and exploration with real-world issues in their intended career fields. The course also focuses on expanding the critical skills necessary for new employees, with topics ranging from professional communication to navigating employment challenges in an evolving landscape.

Repeat for Credit

N

Requisites

A student must have completed AAI 301: Career Readiness for the Applied and Technical Professions and be senior standing to register for this course. While not required for this course, it is recommended that student have take AAI 501: Internship in Applied and Interdisciplinary Studies prior to this course.

Typically Offered

Fall, Spring, Summer

AAI 595 - Undergraduate Advanced Topics in Applied and Interdisciplinary Studies

Credits .5-3

Advanced undergraduate topics in Applied and Interdisciplinary Studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 695 - Special Topics in Applied and Interdisciplinary Studies

Credits .5-3

Special topics in Applied and Interdisciplinary Studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 795 - Topics in Applied and Interdisciplinary Studies

Credits .5-6

Selected topics in applied and interdisciplinary studies.

Note

100% Lecture

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 797 - U.S. Animal Politics and Policymaking

Credits 2

The goal of this course is for students to become familiar with basic concepts of politics and policymaking related to animals in the United States. The course will examine the role of interest groups, elected representatives, and government agencies in the creation and implementation of policies involving companion animals, wildlife, farm animals, and animals used in research.

Repeat for Credit

N

Typically Offered

Spring

AAI 801 - Interdisciplinary Process

Credits 3

The overall goal of this course is for students to develop an understanding of and practice in interdisciplinary and multidisciplinary thinking, problem solving, and team based leadership, using models that allow interdisciplinary and cross-function teams to work together and to generate imaginative and creative solutions to complex challenges and problems.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry

Credits 2

This course explores the topic of regulations associated with animal health product development and manufacturing. Topics for discussion will include an overview of the regulatory affairs process in the U.S. and other countries, drug and vaccine classifications and the approval process, GCP/GLP guidelines, drug and vaccine

efficacy and safety testing, human and environmental safety issues, and future challenges and current industry needs.

Note

100% Lecture

Repeat for Credit

N

Typically Offered

Fall, Spring

AAI 841 - Strategies in Pre-Clinical and Clinical Research for Regulatory Affairs in Animal Science

Credits 2

In this course, students will review the history of regulations as well as gain an understanding of the integration of science into successful product approval outcomes. Students will learn how to achieve target claims for developing new products while ensuring safety. Students will also be introduced to the planning, design, and conduct of preclinical and clinical studies. The topics covered include protocol design and the evaluation and assessment of regulatory submissions. The course will consider practical issues in regulatory affairs. Students may participate in case study exercises.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AAI 842 - Strategies in the Stewardship of Licensed Pharmaceuticals and Biologics in Animal Health

Credits 1

In this course, students will learn about the role of regulatory affairs in the stewardship of animal health products. The topics covered include expected activities primarily post product approval, compliance, strategies for supply management, product life cycle management, risk management, and the role of industry in policy development. Communication with various stakeholders, including regulatory agencies, research and development, manufacturing, and marketing and sales are covered. The course will consider practical issues in regulatory affairs.

Students may participate in case study exercises.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AAI 843 - Regulatory Development of Animal Pharmaceuticals - FDA

Credits 2

In this course, students will focus on the regulatory strategies that support product development and maintenance regulated by the Food and Drug Administration (FDA) Center for Veterinary Medicine (CVM). This includes product development strategies based on clinical and nonclinical data, key manufacturing and supply chain regulations, and post approval product life cycle management, including pharmacovigilance. Variances between food animal and non-food animal targets in developing regulatory strategies will be reviewed. Special topics, current topics and FDA enforcement actions will be covered.

Repeat for Credit

N

Requisites

Prerequisite: AAI 840, STAT 703

Typically Offered

Summer

AAI 844 - Regulatory Development of Animal Pesticides - EPA

Credits 2

In this course, students will focus on the regulatory strategies for the development of products deemed to be regulated by the Environmental Protection Agency (EPA). This course will focus on product development strategies, manufacturing and supply chain regulations, and post marketing product life cycle management, including pharmacovigilance. Environmental laws and risk assessment will also be covered.

Repeat for Credit

N

Requisites

Prerequisite: AAI 840, STAT 703

Typically Offered

Fall

AAI 845 - Regulatory Development of Animal Biologicals and Diagnostics - USDA**Credits 2**

In this course, students will focus on the structure and detailed approach for developing animal biologicals and diagnostics regulated by the United States Department of Agriculture (USDA). Students will gain solid understanding of the critical pathway to successful product development, manufacturing, compliance, and product life cycle management, including post marketing surveillance. The course also addresses adapting new technology to emerging and re-emerging diseases.

Repeat for Credit

N

Requisites

Prerequisite: AAI 840, STAT 703

Typically Offered

Fall

AAI 846 - Special Topics: Regulatory Affairs in Animal Health**Credits 1**

This course will be used as the final culminating experience in the Animal Health Regulatory Affairs (AHRA) graduate certificate program, where it will require the completion of a final project that integrates learning following the completion of program courses.

Repeat for Credit

N

Requisites

Prerequisites: AAI 840, AAI 841, AAI 842, AAI 843, AAI 844, AAI 845, and STAT 703 or advisor approval.

Typically Offered

Fall, Spring, Summer

AAI 852 - Vaccinology**Credits 3**

This multidisciplinary course is designed to provide the student with an understanding of vaccine development (including technology) from conceptualization through development, testing, and utilization. This course will specifically cover topics on the principles of pathogenesis of infectious diseases, immune protection, and eliciting protective immunity by vaccination; application of traditional and new technologies to vaccine development; principles of pre-clinical development, manufacturing, and clinical evaluation of a vaccine; importance of the regulatory process to vaccine development; and utilization of epidemiology to measure vaccine need and effectiveness.

Repeat for Credit

N

Typically Offered

Spring

AAI 858 - Capstone Experience I**Credits 1**

This course provides students the opportunity to synthesize and integrate knowledge in its application to professional practice. It is designed for students who intend to work in an applied professional setting where they are expected to critically apply existing knowledge and methods to solve problems. Students will complete a project proposal on a topic of interest and related assignments, in consultation with the instructor.

Note

100% Individual Instruction

Repeat for Credit

Y

Requisites

Prerequisite: Only Professional Science Master's degree students may enroll in this course.

Typically Offered

Fall, Spring, Summer

AAI 859 - Capstone Experience II**Credits 2**

This course provides students the opportunity to synthesize

and integrate knowledge in its application to professional practice. It is designed for students who intend to work in an applied professional setting where they are expected to critically apply existing knowledge and methods to solve problems. Students will produce written reports and oral presentations on their project of focus.

Note

100% Individual Instruction

Repeat for Credit

Y

Requisites

Prerequisite: AAI 858. Only Professional Science Master's degree students can enroll in AAI 859. Instructor approval is required.

Typically Offered

Fall, Spring, Summer

AAI 860 - Introduction to Systems and Data in Animal Health

Credits 2

The field of Animal Health data analytics is comprised of the application of data systems, data computing, and data programming. This course is focused on data systems and data acquisition within animal health systems.

This is an interdisciplinary course for students interested in data insights and digital technologies in animal health that explores life cycle and data collection systems encountered in Animal Health for both production and companion species, including the realities of data acquisition, data types, and analytics that may exist within those systems.

Repeat for Credit

N

Typically Offered

Fall

AAI 861 - Research Strategies to Drive Development of Animal Health Products

Credits 2

Develop a working knowledge of the product development pipeline and continuous discovery techniques using both research and market insights as drivers for innovation in the Animal Health industry.

Repeat for Credit

N

Typically Offered

Spring

AAI 862 - Applied Analytics in Animal Health

Credits 3

The field of Animal Health data analytics is comprised of the application of data systems, data computing, and data programming. This course will cover all three areas of data systems, data computing, and data programming in an applied format that is specific to the animal health industry.

This is an applied course for students interested in developing skills in analytics and data science as they apply to animal health. Students will be expected to assess relevant outcomes in animal health systems while deducing proper methods for data preparation and manipulation, extrapolating understanding of data analytics to select the appropriate analysis approach, performing supervised and unsupervised machine learning, and effectively communicating both analysis and interpretation of outcomes as they apply to the field of animal health. Students will be asked to use Python and other software systems. Students will formulate reasons why working in interdisciplinary teams benefits analytic projects in animal health.

Note:

Course does not have prerequisites but it is recommended that students take AAI 864 or similar course for those without a data analytics or data programming background.

Repeat for Credit

N

Requisites

Prerequisite: Recommend AAI 864 or similar course for those without a data analytics or data programming background.

Typically Offered

Spring

AAI 863 - Special Topics: Data Analytics and Insights in Animal Health

Credits 1

This course is the final component of the Data Analytics and Insights in Animal Health Graduate Certificate program. Students will demonstrate core certificate objectives by completing a project proposing a new data analytic and insight technology for the animal health industry. Students will describe the necessary components for project execution, requirements to develop the analytic tool or technology, and how the analytic tool or technology will be used in animal health.

Repeat for Credit

N

Requisites

AAI 860, AAI 861, and AAI 862

Typically Offered

Fall, Spring, Summer

AAI 864 - Introduction to Computing for Animal Health

Credits 3

The field of Animal Health data analytics is comprised of applications of data systems, data computing, and data programming. The focus of this course is on data computing and programming as applied to animal health data.

The purpose of this course is to introduce students to the application of essential data-driven approaches to tackle the challenges facing animal health. The use of computational approaches is considered to be more valuable in helping scientists study specific hypotheses in animal health. The Introduction to Computing for Animal Health course will focus on intuitive computational methods to address animal health questions with interdisciplinary philosophy. Students will understand the analysis workflows and computational methods that unravel and translate complicated data from animal health into a comprehensive demonstration.

Repeat for Credit

N

Typically Offered

Spring

AAI 865 - Assessing Effectiveness of Animal Therapeutics and Vaccines

Credits 1

This interdisciplinary course is designed for students working with data derived from animal health systems to expand their knowledge and understanding of the pathophysiology of common animal diseases. This course will familiarize students with animal disease processes and basic principles behind the use of clinical laboratory assays, including their use in assessing efficacy of drugs or vaccines. Laboratory data from animal studies will be used to apply principles discussed during the course.

Repeat for Credit

N

Typically Offered

Fall

AAI 867 - Zoonotic Pathogens in the Food Chain

Credits 2

This interdisciplinary course is designed for students to expand their knowledge of how modern food production systems contribute to the risk of zoonotic diseases, and where mitigation strategies need to be focused. Through case study discussions, students will examine attributes of microorganisms that allow potential contamination of food sources, as well as how new trends in animal production, such as organic livestock farming and raw milk consumption, influence safety in the food chain.

Repeat for Credit

N

Typically Offered

Summer

AAI 870 - Seminar in Applied and Interdisciplinary Studies

Credits 1-6

Student presentations and discussion of current topics and recent findings in applied and interdisciplinary studies.

Note

100% Seminar

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 880 - Problems in Applied and Interdisciplinary Studies

Credits 1-6

Opportunity for advanced independent study of a specific problem or technique in applied and interdisciplinary studies. Topics selected jointly by student and instructor.

Note

10% Independent Study

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 895 - Advanced Topics in Applied and Interdisciplinary Studies

Credits 5-6

Focus on advanced topics in applied and interdisciplinary studies.

Note

100% Lecture

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAI 899 - Research in Applied and Interdisciplinary Studies

Credits 1-6

Research with a focus on applied science and interdisciplinary studies.

Note

100% Research

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AAM 472 - Large Fixed-Wing Operations Flight Lab

Credits 2

In this course, students will learn to fly a larger than small UAS. This will require students to fly within a regulatory environment outside of 14 CFR Part 107. Course delivery will focus on safety and crew resource management. Emphasis is on experiential learning.

Note

3 hours of lab per week. Students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 471 and UAS 367

Typically Offered

Spring

AAM 601 - Introduction to Advanced Air Mobility Systems

Credits 1

Students will be introduced to the Urban Air Mobility and Uncrewed Traffic Management ecosystem. Additional learning areas will include an overview of regulations, airspace structures, enabling technologies and subsystems, and principles of systems engineering.

Repeat for Credit

N

Typically Offered

Fall

AAM 605 - System Architectures in Advanced Air Mobility Systems

Credits 2

Using a Systems Engineering approach, students will be introduced to the major technical components of Advanced Air Mobility frameworks and critical subsystems such as Autonomous Systems, Guidance and Navigation, Cyber-Physical Systems, Sensory Platforms, Ground Systems, and Uncrewed Traffic Management Systems. Other emerging topics will be included.

Repeat for Credit

N

Typically Offered

Fall

AAM 732 - Aerospace Communication Systems**Credits 3**

Students will be introduced to radio systems, air-to-air, air-to-ground communications, and an overview of current approaches to line-of-sight and beyond-line-of-sight techniques. Additional learning areas include Airspace integration UAS/UAM/ATM/ATC Technologies, BLOS and Satellite Data Link Connectivity, Communications system design, Review of models and techniques (e.g. Uplink/Downlink Model, Noise, SNR), Antennas design and propagation, and Cyber-attack challenges and mitigations.

Repeat for Credit

N

Typically Offered

Fall

AAM 762 - Guidance and Navigation Systems**Credits 3**

Students will develop an understanding of classical and advanced guidance and navigation theories to critically select design guidance and navigation systems. Topics include corridor planning, uncrewed guidance, conventional and advanced guidance approaches, such as proportional navigation, geometric guidance, optimal guidance, GNSS (Global Navigation Satellite Systems), terrain-based navigation, SLAM (Simultaneous Localization and Mapping), cooperative guidance and collision avoidance.

Repeat for Credit

N

Typically Offered

Spring

AAM 801 - Electromagnetic Threats and Mitigation Design for Advanced Air Mobility Systems**Credits 3**

Fundamentals of Electromagnetic Environmental Effects (E3) for AAM systems and mitigation using analytical and software tools. Emphasis will be placed on understanding and hazard mitigation of electromagnetic (EM) energy coupling processes through various transfer paths to onboard receptor devices. E3 sources to be studied include lightning, high-intensity radiated fields (HIRF), portable electronic devices (PED), and precipitation static (P-static).

Repeat for Credit

N

Typically Offered

Spring

ACCTG 231 - Introduction to Managerial Accounting**Credits 3**

Introduces the concepts associated with managerial accounting including cost accounting, job order costing, activity-based costing, cost-volume profit, and incremental analysis. Introduction to budgetary planning, variance analysis, and data analysis is included.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: MATH 100.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

ACCTG 241 - Introduction to Financial Accounting**Credits 3**

Introduces the concepts associated with the accounting cycle, the revenue cycle, the expenditure cycle (including business investments), and the financing cycle. Included is introduction to financial statements and data analysis.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

ACCTG 331 - Intermediate Accounting and Analytics I**Credits 3**

Enhances the understanding of the conceptual framework, the accounting information system, the financial statements, revenue recognition, and current assets. These topics will be enhanced using analytics.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 241.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ACCTG 342 - Taxation I**Credits 3**

Fundamental concepts of income determination in federal and state income tax regulations; examination of the impact of tax regulation on business and personal financial planning and decision making.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 331 or [ACCTG 241 and Senior Standing (90 credit hours)]

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

ACCTG 413 - Accounting Information Systems**Credits 3**

This course describes how information flows through an enterprise, the sources and nature of documents, and the controls necessary to insure the accuracy and reliability of information. The course will also incorporate information technology controls, current computer systems, data analytics, and software applications into the course.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 241.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ACCTG 431 - Problems in Accounting**Credits 1-18**

Problems in Accounting

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for the problems undertaken in accounting and consent of instructor.

Typically Offered

Fall, Spring

ACCTG 432 - Cost Accounting**Credits 3**

Identifying relevant accounting data and organizing, summarizing, and analyzing that data into information useful for planning and budgeting, decision making, controlling, and evaluating functions of management.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 331, MANGT 421.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ACCTG 433 - Intermediate Accounting and Analytics II**Credits 3**

Enhances the understanding of long-term assets, current liabilities, long-term liabilities, and stockholders' equity concepts. These topics will be enhanced using analytics.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 331.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

ACCTG 442 - Auditing I**Credits 3**

An introduction to the environment of auditing and the objectives and techniques of both financial and operational auditing.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 433 and Restricted to Accounting majors

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

ACCTG 445 - Financial Statement Analysis**Credits 3**

This course will develop a student's skills and knowledge in the analysis and interpretation of corporate financial statements and their related footnotes. The class will encourage the student to think logically and creatively about the strengths and weaknesses of accounting information available to investors and shareholders. The main course objective is for the student to be capable of doing an in-depth analysis of a company's financial and operating performance from several financial statements.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231 and ACCTG 241, and FINAN 450.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

ACCTG 490 - Accounting Analytics**Credits 3**

This course will develop in-depth knowledge of the use of Microsoft Excel and other technology to analyze complex accounting information. The course will focus on using large volume data sets to simulate real world analytical problem solving.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 241.

Typically Offered

Fall, Spring, Summer

ACCTG 494 - Law for Accountants

Credits 3

An intensive study of an accountant's professional responsibilities to the public and the profession and the knowledge of the legal implications of business transactions, particularly as they relate to accounting and auditing.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

ACCTG 622 - Fraud and Forensics

Credits 3

This is a full semester course focused on the tools needed to conduct a fraud-sensitive audit or to conduct a fraud investigation. As a part of this course, the student will learn numerous techniques used by fraudsters to deceive their victims as they misappropriate resources. In addition, the student will learn how to investigate accusations or suspicions of fraud from the initial gathering of evidence to the ultimate resolution of the investigation which could include criminal and/or civil lawsuits. Such understandings are important to the practicing auditor. Given the recent scandals in financial reporting, the auditor needs to be alert to signals of fraud in order to discharge his or her responsibilities to the profession, client, and public.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 331

Typically Offered

Spring

ACCTG 625 - International and Multijurisdictional Taxation

Credits 3

Explores the fundamental principles underpinning the US tax law with regard to multijurisdictional activity (primarily international, some interstate).

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 342.

Typically Offered

Spring

ACCTG 631 - Accounting Internship

Credits 0-3

Provides a full semester of practical accounting experience prior to entering graduate accounting program.

Repeat for Credit

N

Typically Offered

Fall, Spring

ACCTG 641 - Intermediate Accounting and Analytics III

Credits 3

Builds on the second intermediate class. Enhances the understanding of investments, accounting for income taxes, pensions and post-retirement benefits, leases, accounting changes (including errors), the statement of cash flows, and disclosures. These topics will be enhanced using analytics.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 331

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ACCTG 642 - Accounting Research and Communication

Credits 3

Use of the sources of authoritative guidance in resolving complex, professionally oriented problems that include auditing, financial reporting, and tax reporting. Students analyze numerous unstructured cases and present their conclusion with written reports and oral presentations.

Note

Students may be enrolled concurrent in ACCTG 442. For accounting majors only.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 342, 433, and 442.

Typically Offered

Fall, Spring, Summer

ACCTG 710 - Foundations of Accounting**Credits 3**

A study of business transactions, including identification of relevant economic events and how those events are recorded in financial statements, and a study of managerial accounting information for decision making, planning, and control.

Note

Not open to Master of Accountancy students.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 205.

Typically Offered

Fall

ACCTG 811 - Advanced Financial Reporting**Credits 3**

An examination of the reporting requirements of large (often multinational) corporations, e.g., foreign currency translation, interim and segment reporting, and business combinations.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 433.

Typically Offered

Fall, Spring

ACCTG 830 - Professional Ethics in Accounting**Credits 03**

Examination of ethical issues in industry and public accounting, including auditing standards, code of professional conduct, fraud, and internal controls.

Repeat for Credit

N

Requisites

Must be admitted to Master of Accountancy (MAcc) program.

Typically Offered

Spring

ACCTG 831 - Fraud and Forensics**Credits 3**

This is a full semester course focused on the tools needed to conduct a fraud-sensitive audit or to conduct a fraud investigation. As a part of this course, the student will learn numerous techniques used by fraudsters to deceive their victims as they misappropriate resources. In addition, the student will learn how to investigate accusations or suspicions of fraud from the initial gathering of evidence to the ultimate resolution of the investigation which could include criminal and/or civil lawsuits. Such understandings are important to the practicing auditor. Given the recent scandals in financial reporting, the auditor needs to be alert to signals of fraud in order to discharge his or her responsibilities to the profession, client, and public.

Repeat for Credit

N

Requisites

Prerequisite: Must have graduate school status.

Typically Offered
Summer

ACCTG 832 - Advanced Auditing

Credits 3

An in-depth exposure to authoritative auditing pronouncements and specialized topics, e.g., statistical methods, EDP auditing, internal auditing, operational auditing, and audit management.

Repeat for Credit
Y

Requisites
Prerequisite: ACCTG 442 and ACCTG 642.

Typically Offered
Fall

ACCTG 833 - Corporate Taxation

Credits 3

A study of the federal taxation of corporations with emphasis on tax planning.

Repeat for Credit
Y

Requisites
Prerequisite: ACCTG 342 and ACCTG 642.

Typically Offered
Fall, Spring

ACCTG 834 - Partnership Taxation

Credits 3

Intensive study of the federal taxation of partnerships.

Repeat for Credit
Y

Requisites
Prerequisite: ACCTG 342 and ACCTG 642.

Typically Offered
Fall

ACCTG 835 - Business Consulting & Advanced Managerial Accounting

Credits 3

This class develops skills in consulting and advising businesses using advanced managerial accounting techniques and practices

Repeat for Credit
Y

Requisites
Prerequisite: ACCTG 432.

Typically Offered
Fall

ACCTG 840 - Introduction to Academic Accounting Research

Credits 3

An introduction to academic accounting research, with an emphasis on educational/pedagogical research; practitioner research and basic research (archival, behavioral, and qualitative).

Repeat for Credit
N

Requisites
Prerequisites: ACCTG 642

Typically Offered
Spring

ACCTG 841 - Advanced Accounting Theory

Credits 3

A critical examination of accounting theory with emphasis upon information economics, agency theory, and capital market information.

Repeat for Credit
Y

Requisites
Prerequisite: ACCTG 641.

Typically Offered
On sufficient demand

ACCTG 842 - Advanced Topics in Taxation

Credits 3

Intensive examination of selected topics in taxation.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 342 and ACCTG 642.

Typically Offered

On sufficient demand

ACCTG 844 - Design of Accounting and Business Information Processes

Credits 3

This course focuses on understanding and designing contemporary business and information processes in organizations, providing an introduction to database systems, project management and information systems controls and technology.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 810, MANGT 830 and instructor permissions for MBA students or ACCTG 331 for Masters of Accountancy students or instructor permission.

Typically Offered

Fall

ACCTG 845 - International Accounting

Credits 3

An examination of comparative international accounting systems, efforts to harmonize accounting standards internationally, problems of international financial analysis, accounting and tax issues of particular relevance to U.S. multinational enterprises.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 342 and ACCTG 641.

Typically Offered

On sufficient demand

ACCTG 846 - International and Multijurisdictional Taxation

Credits 3

To explore the fundamental principles underpinning the US tax law with regard to multijurisdictional activity (international, interstate). At the conclusion of the course, students should be able to identify, analyze and evaluate the following: The theoretical basis of the U.S. approach to international taxation; the U.S. tax treatment of the foreign activity of U.S. citizens, residents and domestic corporations; the U.S. tax treatment of foreigners engaged in business or investment activity in the U.S.; the key issues surrounding state and local taxation.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 342.

Typically Offered

Spring, Summer

ACCTG 847 - Merger and Acquisition Taxation

Credits 3

A study of the federal taxation of corporations, with an emphasis on tax planning related to mergers and acquisition.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 342 and ACCTG 642.

Typically Offered

Fall

ACCTG 852 - Accounting Research and Communication

Credits 3

This is a team taught course that focuses on developing

skills at the higher levels of Bloom's Taxonomy (analysis, synthesis and evaluation) to conduct technical research and communicate the results of that research in both oral and written forms.

Note

May be taken currently with ACCTG 442.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 342 and ACCTG 443.

Typically Offered

Fall, Spring, Summer

ACCTG 855 - Financial Statement Analysis and Business Valuation

Credits 3

This course is about the analysis of financial information for making decisions to invest in businesses. The methods of fundamental analysis will be examined in detail and applied in cases and projects involving listed companies. Topics include models of shareholder value, a comparison of accrual accounting and discounted cash flow approaches to valuation, the analysis of profitability, growth and value generation in a firm, diagnosing accounting quality, forecasting earnings and cash flows, pro-forma analysis for strategy and planning, and the determination of price/earnings (P/E) and market-to-book (P/B) ratios.

Repeat for Credit

N

Requisites

Prerequisite: Must have graduate school status.

Typically Offered

Fall, Spring, Summer

ACCTG 856 - Accounting Analytics

Credits 3

This course will develop in-depth knowledge of the use of Microsoft Excel and other technology to analyze complex accounting information. The course will focus on using large volume data sets to simulate real world analytical problem solving.

Repeat for Credit

N

Requisites

Prerequisite: Must have graduate school status.

Typically Offered

Spring, Summer

ACCTG 857 - Accounting for Not-For-Profit Entities

Credits 3

An introduction to the source of authoritative guidance, rules and regulations that govern current reporting to external entities by not-for-profit entities.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 641.

Typically Offered

Summer

ACCTG 860 - Management Accounting and Business Problem Solving

Credits 3

A study of managerial accounting information for decision making, planning, and control.

Note

Not open to Master of Accountancy students.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 710, ECON 815, FINAN 715, MANGT 710, MANGT 720, MANGT 830, MKTG 705 and STAT 702.

Typically Offered

Fall

ACCTG 870 - Problems in Accounting

Credits 3

An in-depth study of specified topics in accounting.

Note

Consent of instructor and department head.

Repeat for Credit

Y

Typically Offered

On sufficient demand

ACCTG 884 - Enterprise Information Systems Assurance**Credits 3**

This course focuses on types of assurance available in an enterprise-wide information systems environment and methods for providing assurance from the view of management, external auditors and consultants. Assurance topics discussed include assurances related to systems security, fraud, business and information process integrity, and operational efficiency. Focus is on designing systems to increase the level of inherent assurance as well as auditability. This course also includes a service learning component.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 810, MANGT 830 for MBA students or ACCTG 331 for Masters of Accountancy students or instructor permission.

Typically Offered

Spring

ACCTG 890 - Seminars in Professional Accounting**Credits 1-6**

Reviews content and skills for professional certification.

Note

Students should enroll for one credit hour in the first semester they complete the seminar and two credit hours during the second semester they complete the seminar.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ACCTG 895 - Accounting Internship**Credits 3**

This course provides an opportunity for students to experience firsthand the work performed by typical accountants on a day to day basis.

Repeat for Credit

N

Requisites

Prerequisite: Must have graduate school status.

Typically Offered

Fall, Spring, Summer

ACCTG 896 - Accounting International Experience**Credits 1-6**

Students will experience a faculty supervised travel abroad experience that will expose them to international issues related to accounting and general business.

Repeat for Credit

Y

Requisites

Prerequisite: Must have graduate school status.

Typically Offered

On sufficient demand

ADC 200 - Introduction to Addiction**Credits 3**

Analyzes one's knowledge, beliefs, and attitudes concerning addiction, within the

context of professional addiction counseling values and ethics. Examines evidence-based treatment strategies of addiction prevention, treatment, recovery, and relapse. Discusses the impact of addiction on the individual, family, and society.

Repeat for Credit

N

Typically Offered

Fall

ADC 315 - Addiction Pharmacology

Credits 3

Evaluate drug use in modern society. Understand the impact of commonly-used substances on the body. Review pharmacological treatment approaches to withdrawal, treatment, recovery, and relapse prevention.

Repeat for Credit

N

Typically Offered

Spring

ADC 325 - Professional, Ethical, and Legal Issues in Counseling

Credits 3

Explores professional, legal, and ethical issues facing addiction counselors or those in similar helping professional roles. Topics include client rights and responsibilities, confidentiality, and other legal considerations. Follows a discussion of general principles of ethics and major principles of professional conduct.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

ADC 395 - Holistic Recovery and Addiction Services Coordination

Credits 3

Introduces students to holistic recovery and the roles administrators, counselors, and case managers play in assisting clients in achieving their treatment and recovery goals. Explores life challenges that affect a person's ability to enter recovery and maintain it. Examines advocacy skills, coordination of services across multiple systems, and referral activities used to connect clients with community resources.

Repeat for Credit

N

Typically Offered

Fall

ADC 561 - Methods of Individual Counseling

Credits 3

Provides comprehensive examination of substance use treatment and rehabilitation, and includes a thorough examination of the treatment models of addiction, recovery, and relapse. Equips students with the theoretical basis of treatment and ability to clinically assess individuals with substance-related problems and provide evidence-based interventions.

Note

Instructor permission required

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

SOCWK 561

ADC 562 - Practicum in Addiction Counseling

Credits 3-10

Integrates and applies knowledge and skills from coursework to addiction counseling settings for a practicum field experience consisting of 400 clock-hours. The practicum experience will consist of clinical activities that

integrate didactic learning supporting the diagnosis and treatment of substance use disorders. Students will be under the supervision of a LAC or LMAC.

Repeat for Credit

Y

Requisites

Corequisite: ADC 564 or SOCWK 564; instructor permission required

Typically Offered

Fall, Spring, Summer

ADC 564 - Professional Seminar

Credits 2

Integrates academic learning, values exploration and skills acquisition in order to make a successful transition from student to professional. Extensive classroom sharing and discussion will enable students placed in one addiction counseling setting to learn the various facets of the vast array of placement experiences of their classmates.

Repeat for Credit

N

Requisites

Corequisite: ADC 562

Typically Offered

Fall, Spring, Summer

ADC 570 - Methods of Group Counseling

Credits 3

Provides the theoretical framework for effective practice with groups. Facilitates the development of group leaders who possess an understanding of group dynamics and effective leadership skills. Provides students with opportunities to acquire the knowledge base, values, and practice skills necessary for evidence-based work with multicultural populations. Explores methods to establish group goals and treatment outcomes. Defines stages of group development and the challenges and tasks associated with each stage. Identifies value and ethical dilemmas that are common in group practice.

Note

Instructor permission

Repeat for Credit

N

Typically Offered

Fall, Spring

ADC 575 - Addiction and Family

Credits 3

Explores family, social, and community systems in relation to substance use disorder problems. Identifies addictive and intergenerational patterns within families and evaluates family, parenting, and couples counseling methods in relation to various ethnicities and cultures. Reviews relational clinical models including developmental, systemic, solution-focused, and narrative approaches and develops an understanding of the relationship between family factors and recovery.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Social Sciences

ADC 630 - Co-Occurring Disorders and Addictions Treatment

Credits 3

Explores co-occurring disorders and treatment needs of those who have a psychiatric or mental health disorder in combination with a substance abuse disorder. Examines assessment and treatment of persons with co-occurring disorders, along with evidence-based strategies for managing risks associated with treating individuals who have co-occurring disorders.

Repeat for Credit

N

Typically Offered

Spring

AERO 099 - Aerospace Studies Lab

Credits 0

Leadership Laboratory (LLAB) is a dynamic and integrated

grouping of leadership developmental activities designed to meet the needs and expectations of prospective Department of the Air Force second lieutenants and complement the AFROTC academic program. It is a student planned, organized, and executed practicum conducted under the supervision of the Detachment Commander and Operations Flight Commander. Objectives are proficiency-based or characterized as task knowledge or performance. It is required to teach all lesson objectives and track the proficiency level for each student using the AFROTC-approved LLAB Objectives Tracker. LLAB objectives may be presented throughout the academic year in any order. Proficiency levels defined for each objective are based on the minimum skill level required for successful completion.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring

AERO 110 - The Foundation of the United States Air Force - Heritage and Values I

Credits 1

"Heritage and Values," is a survey course designed to introduce students to the Department of the Air Force (DAF) and provides an overview of the basic characteristics, missions, communications and organization of the Air and Space Forces.

Note

One hour of class a week. Recommended Foundation Course for AERO 111

Repeat for Credit

N

Typically Offered

Fall

AERO 111 - The Foundations of the United States Air Force-Heritage and Values II

Credits 1

A continuation for AERO 110. Represents the second semester of a two semester class. "Heritage and Values," is

a survey course designed to introduce students to the Department of the Air Force (DAF) and provides an overview of the basic characteristics, missions, communications and organization of the Air and Space Forces.

Note

One hour of class a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AERO 110.

Typically Offered

Spring

AERO 210 - Team and Leadership Fundamentals I

Credits 1

"Leadership Foundation," provides a fundamental understanding of both leadership and team building. The lessons and course flow are designed to prepare students for field training and leadership positions in the detachment.

Note

One hour of class a week. Recommended Foundation Course for AERO 211

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

AERO 211 - Team and Leadership Fundamentals II

Credits 1

A continuation for AERO 210. Represents the second semester of a two semester class. "Leadership Foundation," provides a fundamental understanding of both leadership and team building. The lessons and course flow are designed to prepare students for field training and leadership positions in the detachment.

Note

One hour of class a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AERO 210.

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

AERO 215 - AFROTC Field Training**Credits 1-4**

Provides cadets with a 13-day program designed to evaluate military leadership and discipline, determine potential for entry into the Professional Officer Course (POC), and stratification amongst their peers.

Repeat for Credit

N

Typically Offered

Summer

AERO 310 - Officer Leadership Studies 3A**Credits 3**

"Leading People," utilizes student's field training experience to take a more in-depth look at leadership. Special emphasis is placed on enhancing communication skills, and why that is important as a leader. Students have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors.

Note

Three hours of class a week.

Repeat for Credit

N

Requisites

Pre-requisite for AERO 311

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

AERO 311 - Officer Leadership Studies 3B**Credits 3**

A continuation for AERO 310. Represents the second semester of a two semester class. "Leading People," utilizes student's field training experience to take a more in-depth look at leadership. Special emphasis is placed on enhancing communication skills, and why that is important as a leader. Students have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors.

Note

Three hours of class a week.

Repeat for Credit

N

Requisites

Prerequisite: AERO 310

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

AERO 410 - Regional Studies and Defense Policy**Credits 3**

Designed for college seniors and provides them the foundation to understand their role as military officers and how they are directly tied to our National Security Strategy. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level.

Note

Three hours a week.

Repeat for Credit

N

Requisites

Pre-requisite for AERO 411

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

AERO 411 - Aerospace Studies/Civil Military Relationships**Credits 3**

A continuation for AERO 410. Represents the second semester of a two semester class. Designed for college seniors and provides them the foundation to understand their role as military officers and how they are directly tied to our National Security Strategy. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level.

Note

Three hours of class a week.

Repeat for Credit

N

Requisites

Prerequisite: AERO 410

Typically Offered

Spring

AERO 499 - Problem Solving in Aerospace Studies**Credits 1-3**

Work offered in any of the AFROTC general or professional courses for students out of phase for graduation; material covered in a basic or advanced course.

Note

Instructor consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AFRI 400 - African Study Abroad**Credits 1-4**

The study abroad educational trip will provide students the opportunity to apply their knowledge of an African language and to learn first hand about various African societies and cultures, farming systems, environment, health and other issues related to their host country.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AFRI 501 - Seminar I**Credits 3**

Economics of Poverty and Wealth Creation in Africa (social science component). Explores opportunities for breaking the cycle of poverty across the continent using strategic wealth creation techniques that overcome poverty. Focusing on the agriculture and food system, the environment and natural resources, and the health of the African people.

Repeat for Credit

N

Typically Offered

Fall

AFRI 502 - Seminar II**Credits 3**

African Development. Introduction to current political and economic conditions facing Africa from historical, social, economic, political, and human context. Solutions to the current problems confronting the African continent are analyzed.

Repeat for Credit

N

Typically Offered

Spring

AGCOM 100 - Agricultural Communications Orientation

Credits 1

Orientation to the agricultural communications and journalism industry, on-campus resources, and college-level skill building.

Repeat for Credit

N

Typically Offered

Fall

AGCOM 110 - Introduction to Agricultural Communications

Credits 2

Introduction to agricultural communications programs, activities, careers, and trends. This course will cover audience analysis across media platforms, Associated Press writing style, and understanding target audiences.

Note

Two hours lecture per week.

Repeat for Credit

N

Typically Offered

Fall

AGCOM 210 - Layout and Design Principles

Credits 3

This course uses leading industry-adopted software to develop printed communications pieces to the point of being "printer ready", addressing design concepts and layout aspects critical to successfully printing a project. Assignments will integrate software functionality and design concepts with print production technology requirements.

Note

Lecture.

Repeat for Credit

N

Requisites

Prerequisite: AGCOM 110.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

AGCOM 222 - Agricultural Business Communications

Credits 3

Written communications as used in agricultural industries. A writing course emphasizing the tools and techniques of writing memos, letters, short and long reports, proposals, and presentations.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100

Typically Offered

Fall, Spring

AGCOM 286 - Topics in Agricultural and Natural Resources Communications

Credits 0-3

Examination of current topics in undergraduate agricultural communications.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGCOM 296 - Problems in Agricultural and Natural Resources Communications

Credits 1-3

Independent guided studies in any of the many fields associated with agricultural and natural resources

communications.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGCOM 300 - Careers in Agricultural Communications

Credits 3

This course provides students with advanced knowledge regarding careers in agricultural communications. Students will learn about how to find, apply for, and manage a position in agricultural communications, including topics related to job search, professional development, workplace conflict, portfolio development, interview skills, writing in a professional environment, and salary negotiation. An emphasis in workplace ethics through case studies and service learning will be provided.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing AND AGCOM 110 or concurrent enrollment.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AGCOM 310 - Communicating in the Agricultural Industry

Credits 3

The purpose of this course is to help students identify the influence of communication styles and theories related to issues in agriculture and natural resources. The course will build skill in oral and visual communication through formal and informal presentations and discussions.

Note

Three hours lecture per week.

Repeat for Credit

N

Typically Offered

Fall

AGCOM 345 - Application of Layout and Printing Techniques in Agriculture and Natural Resources

Credits 3

This course advances students' understanding of how industry-adopted software and hardware are used to develop printed communications pieces, going from individual application functionality to application integration for developing and managing production projects.

Repeat for Credit

N

Requisites

Prerequisite: AGCOM 210 or MC 341.

Typically Offered

Fall

Crosslisted

MC 345

AGCOM 410 - Agricultural Student Magazine

Credits 1-5

Planning, interviewing, and preparing stories, headlines, layouts, advertising, and editing, for the *Kansas State Agriculturist* published by students in the College of Agriculture.

Repeat for Credit

Y

Requisites

Prerequisite: AGCOM 345 and MC 200, MC 221 or MC 280.

Typically Offered

Fall, Spring

AGCOM 420 - Topics in Agricultural Communications

Credits 1-3

Discussions of topics, studies, and activities important to agricultural communications.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGCOM 425 - Undergraduate Research in Agricultural Communications**Credits 0-3**

This course uses qualitative, quantitative or mixed methods to conduct an agricultural and environmental communications research project. A faculty coordinator will assist students through the stages of conducting a research project and reporting its outcomes.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

AGCOM 435 - Video in Agriculture and Food**Credits 3**

Theory of visual storytelling is combined with basic and intermediate video camera and non-linear editing instruction to produce TV documentaries, magazine-type stories, and personal videos for web and broadcast distribution.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing AND AGCOM 110 or concurrent enrollment.

Typically Offered

Spring

AGCOM 550 - Internship in Agricultural Communications**Credits 1-3**

The intern works in a professional capacity in areas such as print journalism, electronic media, advertising, photography, and public relations. Student is supervised by a professional and a faculty member. One hour of credit for each four weeks of supervised work. Internship report and presentation required.

Note

Independent study. Instructor permission.

Repeat for Credit

Y

Requisites

Prerequisite: AGCOM 300

Typically Offered

Fall, Spring, Summer

AGCOM 590 - New Media Technology**Credits 3**

This course focuses on the study and application of emerging "new media" technologies to effectively communicate information and market products and programs to general and targeted audiences. Students will study underlying communication theories such as Roger's Theory of Innovation Diffusion to provide a context of how society adopts and incorporates new technology.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing AND AGCOM 110 or concurrent enrollment.

Typically Offered
Fall

AGCOM 600 - Capstone Seminar in Agricultural Communications

Credits 3

A capstone experience and project for agricultural communications and journalism students. Includes analysis of trends and issues in the field and discussion of communications planning.

Note
Three hours lecture a week

Repeat for Credit
N

Requisites
Prerequisites: AGCOM 310, AGCOM 435, and AGCOM 590.

Typically Offered
Spring

AGCOM 610 - Crisis Communication

Credits 3

Focus is placed on the application of effective crisis communication practices and techniques. Students will learn relevant interpersonal and organizational communication theory, assess/evaluate organizational risks, and develop a crisis communication plan. Students will partner with a community business to create and deliver a comprehensive crisis communication plan.

Note
Three hours lecture a week. Prerequisite or instructor permission.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing AND AGCOM 110 OR Concurrent Enrollment.

Typically Offered
Spring

AGCOM 635 - Advanced Multimedia Production in Agriculture and Food

Credits 3

Provides an understanding and application of advanced digital media production techniques. This is a "practicum-based" course focused on creating multimedia products for educational purposes. Students will create short-format, multi-media pieces on both agricultural research and activities conducted at Kansas State University and the Kansas agriculture industry.

Note
Instructor permission.

Repeat for Credit
N

Requisites
Prerequisite: AGCOM 435 or MC 301

Typically Offered
Fall, Spring

AGCOM 650 - Study Experience in Agricultural Communications and Journalism

Credits 3

Seminar and travel course to prepare students before and after the experience and for students to analyze, critique and report their experiences associated with study tours and short courses.

Note
Instructor permission

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

AGCOM 712 - Environmental Communication

Credits 3

Combines theoretical discussions with practical experience regarding communication about environmental issues and provides introduction to natural and applied science topics related to the communications plan.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Spring

Crosslisted

MC 712

AGCOM 716 - Technical Communication in Agricultural Education and Communications**Credits 1**

Audience identification, writing, editing, formatting and production of social science-based materials for publication. Communicating information relevant to human subject research in agriculture, natural resources, and life sciences to research peers.

Repeat for Credit

N

Typically Offered

Spring

AGCOM 717 - Proposal Development in Agricultural Education and Communications**Credits 1**

Assist graduate students in the preparation of their thesis or dissertation research proposal. Students will produce the first three chapters of their thesis by the end of the course.

Repeat for Credit

N

Typically Offered

Spring

AGCOM 718 - Grantwriting in Agricultural Education and Communications**Credits 1**

Experience of navigating the research grant writing process, covering the process from idea conception through planning, proposing, receiving, executing grant-funded projects. Independent grant proposal as a major assignment in this course.

Repeat for Credit

N

Typically Offered

Fall

AGCOM 733 - Graphical Design and Theory in Agricultural Communications**Credits 3**

Graphic design and software skills specific to industries in Agriculture, Food, and Life Sciences using industry-standard software to prepare text and graphics and package them for use in print production.

Repeat for Credit

N

Typically Offered

Summer

AGCOM 738 - Utilizing Online Media in Agricultural Communications**Credits 3**

Identify agricultural audiences, conduct analyses, and use results to evaluate and produce online media that utilizes design fundamentals, visual communication theories, and new media technology.

Repeat for Credit

N

Typically Offered

Summer

AGCOM 786 - Topics in Agricultural Communications**Credits 1-3**

Examination of current topics in agricultural

communications.

Note

Varied specialized topics will be offered so course may be repeated.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGCOM 800 - Foundations of Agricultural Communications

Credits 3

Historical foundations of agricultural communications philosophical concepts, changes over time, industry today and the future. In-depth analysis and discussion of communication theories, application and current issues.

Repeat for Credit

N

Typically Offered

Fall

AGCOM 810 - Scientific Communication

Credits 3

Written, visual, and oral communications for scientists. Attention is focused on literature reviews, scientific papers, graphics, poster presentations, and oral paper presentations. Grant applications, ethics, and communications with non-science audience are discussed.

Note

Three hours lecture per week. Instructor permission.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing

Typically Offered

Fall

AGCOM 814 - Graduate Studies in Leadership Communication

Credits 3

This course examines the intersections of community-engaged scholarship and leadership through practices of relationship, story, strategy, and action. Students are introduced to resources and opportunities for pursuing public engagement, community-engaged scholarship, and successful program completion.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

COMM 814, LEAD 814

AGCOM 815 - Seminar in Leadership Communication

Credits 1

This seminar provides doctoral students opportunities for collaboration and mentorship with peers, faculty, and visiting scholars, and exploration of career pathways in public engagement.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

Crosslisted

COMM 815, LEAD 815

AGCOM 820 - Communicating Ethical Issues in Agriculture

Credits 3

This course provides an introduction to communicating ethical theories in the context of agriculture. Ethical theory and current research are used to critique contemporary issues in agriculture.

Note

Three hours of lecture a week.

Repeat for Credit

N

Typically Offered
Spring

AGCOM 830 - New Media Technology

Credits 3

This course focuses on the study and application of emerging "new media" technologies to effectively communicate information and market products and programs to general and targeted audiences. Students will study underlying communication theories such as Roger's Theory of Innovation Diffusion to provide a context of how society adopts and incorporates new technology.

Repeat for Credit
N

Typically Offered
Fall

AGCOM 840 - Diffusion of Innovations

Credits 3

This course introduces a structured approach for dealing with the organizational and human aspects of technology transition, including the key concepts of resistance and change management, organizational change, communications, and processes by which professional change agents influence the introductions, adoption, and diffusion of technological change.

Note
Great Plains Ag*IDEA Course Delivery.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

AGCOM 844 - Theory in Agricultural Communications

Credits 3

The study of major communication theories and theorists in the context of agricultural communications.

Repeat for Credit
N

Typically Offered
Fall

AGCOM 845 - Approaches to Public/Community Engagement

Credits 3

The course will provide students a survey of key concepts and theoretical frameworks associated with deliberative democracy and public engagement. A specific focus will be given to how forms of community-engaged scholarship intersect course content in both theory and practice.

Repeat for Credit
N

Typically Offered
Fall, Spring

Crosslisted
COMM 845, LEAD 845

AGCOM 850 - Knowledge Management in Agriculture and Natural Resources

Credits 3

Knowledge Management is a discipline that takes a comprehensive, systematic approach to the information assets of an organization by identifying, capturing, collecting, organizing, indexing, storing, integrating, retrieving and sharing them. This strategy turns an agricultural and natural organization's intellectual assets into greater productivity and increased competitiveness. It encourages collaboration for the sharing of expertise and knowledge of the best practices. This course examines knowledge management as it is emerging and being applied in agriculture and natural resources.

Repeat for Credit
N

Typically Offered
Spring

AGCOM 890 - Master's Project

Credits 1-2

The project is designed for students to complete a practitioner-based scholarly project that integrates theory,

research and application in relationship to a current need or issue approved by the student's supervisory committee. While research is included in this project, the focus will be on demonstrating an ability to apply the knowledge and skills learned within the context of a for-profit or not-for-profit enterprise, school, community, organization or policy process.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

AGCOM 899 - Master's Thesis

Credits 1-6

Students investigate an academic problem in their chosen area of interest and document this investigation in a thesis. The investigation integrates and applies knowledge from courses in the program to address unstructured problems. The thesis is a practice in applying scientific criteria on a problem or topic approved by the student's supervisory committee and also is practice in applying scientific methods.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

AGCOM 916 - Communication Theories and Engagement

Credits 3

Focusing on the intersections of communication theory and engagement, this course reviews the paradigmatic evolution of communication theories as they relate to culture, organizations, leadership, social influence, emerging media technologies and other pertinent areas. Additionally, students will be exposed to philosophical and theoretical work pertaining to community engaged research.

Repeat for Credit
N

Typically Offered
Fall, Spring

Crosslisted
COMM 916, LEAD 916

AGCOM 945 - Social Science Research for Public Problem Solving

Credits 3

This course is a rigorous and applied exploration of the fundamentals of social science research, social sector evaluation, and knowledge mobilization.

Repeat for Credit
N

Typically Offered
Fall, Spring

Crosslisted
COMM 945, LEAD 945

AGCOM 999 - Research in Leadership Communication

Credits 1-15

Doctoral research demonstrates the candidate's ability to conduct significant original research related to leadership and communication, to analyze the information obtained from the research, and to present the results in a dissertation format appropriate to the field.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

Crosslisted
COMM 999, LEAD 999

AGEC 100 - Special Topics in Agricultural Economics/Agribusiness

Credits 0-6

Seminars of special interest. Will be offered upon sufficient demand in selected areas relating to agricultural economics and agribusiness.

Repeat for Credit

Y

Typically Offered

Fall, Spring

AGEC 105 - Agricultural Economics and Agribusiness Orientation

Credits 1

Introduction to agricultural economics and agribusiness programs, activities, resources, and careers. Required of all freshmen in agricultural economics or agribusiness at K-State.

Note

Meets first half of the semester.

Repeat for Credit

N

Typically Offered

Fall

AGEC 115 - Decision Tools for Agricultural Economics and Agribusiness

Credits 2

Development of foundational computer-based empirical skills that address economic and business issues in food and agriculture. Students will learn how to model information on an issue or problem using mathematical spreadsheets to find relevant answers for decision makers and stakeholders.

Note

Two hours recitation per week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

AGEC 120 - Agricultural Economics and Agribusiness

Credits 3

A course suggested for all students interested in the agricultural economy. A study of economic principles, with emphasis on their application to the solution of farm, agribusiness, and agricultural industry problems in relationship to other sectors of the United States economy and foreign countries.

Note

Two hours lecture and one hour recitation per week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

AGEC 121 - Honors Agricultural Economics and Agribusiness

Credits 3

A course suggested for all honors students interested in the agricultural economy. A study of economic principles, with emphasis on their application to the solution of farm, agribusiness, natural resource and agricultural industry problems in relationship to other sectors of the United States economy and foreign countries. The course will include extensive discussion, writing, and computer assignments on application of economic principles to real-world problems and issues.

Note

Three hours lecture a week. Prerequisite or instructor permission and eligible for honors program.

Repeat for Credit

N

Requisites

Prerequisite: Admitted to university honors or college scholars program

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

AGEC 202 - Small Business Operations**Credits 3**

Opportunities in business ownership, principles governing the starting of a small enterprise; importance, status, problems, and management of a small business.

Note

For non-majors.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110 or AGECE 120 or AGECE 121 or ECON 120.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Human Diversity within the U.S.

AGEC 220 - Grain and Livestock Marketing Systems**Credits 3**

Survey of the institutions and mechanisms that facilitate and regulate the sale and marketing of grain and livestock commodities. Topics include the physical and informational flows in the commodity supply chains, cash pricing, commodity grades to improve market efficiency and the governmental regulations and agencies influencing commodity trading.

Note

Intended for non-majors.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Global Issues and Perspectives

AGEC 308 - Farm and Ranch Management**Credits 3**

Decision-making process, cost concepts, farm records and financial management, budgeting, time value of money, and introduction to whole farm/ranch planning.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

AGEC 315 - Contemporary Issues in Global Food and Agricultural Systems**Credits 3**

A survey of contemporary economic issues affecting world agricultural systems including population growth, trade, globalization, natural resource and environmental policy.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120, AGECE 121, ECON 110, or ECON 120.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

AGEC 318 - Food and Agribusiness Management**Credits 3**

A study of marketing, production, risk, human resource management, and financial management in agribusiness firms. Particular attention is given to the application of economic principles to the management of marketing and farm supply firms.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120; and MATH 100.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

AGEC 411 - Agricultural Policy**Credits 3**

Institutional and analytical treatment of historical and current economic problems, public policies and government programs affecting agriculture and rural America.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120 or ECON 110.

Typically Offered

Fall

K-State 8

Historical Perspectives

AGEC 420 - Commodity Futures**Credits 3**

This course is designed to introduce students to the purpose, operation, and use of commodity futures and options markets. The objectives are to: (1) understand why futures exchanges and commodity futures contracts exist; (2) understand and be able to forecast basis; (3) understand hedging and be able to design hedging strategies for various commodity producers and users; (4) understand both put and call options and their potential use in a commodity risk management program; and (5) understand the usefulness and shortcomings of fundamental and technical analysis.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Global Issues and Perspectives

AGEC 441 - Agricultural Economics and Agribusiness Seminar**Credits 1-18**

Seminars of special interest will be offered upon sufficient demand in selected areas relating to agricultural economics and agribusiness or competitive teams qualifying for academic credit.

Repeat for Credit

Y

Typically Offered

Other

AGEC 445 - Agribusiness Internship**Credits 1-3**

Approved and supervised work-study programs in various areas of agribusiness.

Note

Project reports required. Instructor permission.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGEC 450 - Agricultural Economics and Agribusiness Problems

Credits 1-18

Agricultural Economics and Agribusiness Problems

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGEC 460 - International Food and Agribusiness Study Tour

Credits 0-6

An experiential learning course to prepare students for and to immerse them in an international study tour of selected food and agribusiness industries. The topics vary by the tour and the industries studied.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

AGEC 470 - Cooperative Management

Credits 3

This course focuses on the unique aspects of the

cooperative business model and its evolution over time.

Students will utilize course material to gain a deeper understanding of the history and need for cooperatives by applying economic, finance, marketing, and management tools to cooperatives.

Repeat for Credit

N

Requisites

Prerequisite: AGECEC 120 or AGECEC 121 or ECON 120.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Historical Perspectives

AGEC 480 - Farm and Ranch Income Tax Management

Credits 3

This course introduces unique income tax provisions that apply to commercial agricultural producers. Students will better understand the importance of accounting records, the income tax impact of farm management decisions, and tools available to manage income taxes. Emphasis will also be placed on the importance of considering income taxes when planning for transition of the family farm or ranch from one generation to the next.

Note

3 hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231, and AGECEC 308 or AGECEC 318

Typically Offered

Fall

AGEC 500 - Production Economics

Credits 3

Application of economic principles to problems of agricultural production. Analysis of consumer demand for agricultural products and input and output decisions of the

agricultural firm. AGECE 505 is a continuation of this course and they are intended to be taken in consecutive semesters.

Note

Three hours of recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120 and MATH 205. Recommended Foundation Course: AGECE 115.

Typically Offered

Fall, Spring

AGECE 501 - Data Analysis and Optimization

Credits 3

Analysis of agricultural business and economic data and optimization for decision making. Study applications of regression, time series analysis and forecasting to agricultural and economic data. Introduction to mathematical programming to model optimization of problems commonly encountered in agricultural economics.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 115, AGECE 120 or AGECE 121 or ECON 120, MATH 205, STAT 250.

Typically Offered

Fall, Spring

AGECE 505 - Agricultural Market Structures

Credits 3

Theory and application of economic principles to marketing problems in agriculture. Pricing of agricultural output and productive services under various forms of economic organization and competition; regional specialization, location, and trade; determinants of economic change; evaluation of economic and consumer

welfare.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120 and MATH 205 and AGECE 500. Recommended Foundation Course: AGECE 115.

Typically Offered

Fall, Spring

AGECE 513 - Agricultural Finance

Credits 3

Analysis of capital investments, interpretation of financial statements, capital structure considerations for agricultural firms, and farm real estate pricing.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 308 or AGECE 318 and ACCTG 231. Recommended Foundation Course: AGECE 115.

Typically Offered

Fall, Spring

AGECE 515 - Food and Agribusiness Marketing

Credits 3

A broad view of marketing; food markets and consumption; marketing functions and institutions; prices, competition, and marketing costs; functional and organizational issues; food marketing regulations; commodity marketing.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120.

Typically Offered

Fall, Spring

AGECE 516 - Agricultural Law and Economics**Credits 3**

The legal framework for decision making by farm firms, families, and individuals; liabilities, real and personal property, contracts, uniform commercial code, organization of farm firms, intergeneration property transfers, water law, fence law, federal and state regulatory power, insurance, income tax, and social security.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110 or AGECE 120 or AGECE 121 or ECON 120 and junior standing.

Typically Offered

Spring

AGECE 520 - Market Fundamentals and Futures/Options Trading**Credits 3**

This is an experiential course in the trading of commodity futures and options. Attention is focused on the study of market price determination, the implications of market efficiency notions, and on actual trading of futures and options. Students invest in a commodity educational trading fund. Class approves recommendations by vote, orders are placed with a broker, and the class monitors open trades. The pool balance at the end of the semester is redistributed to students.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 420.

Typically Offered

Fall, Spring

AGECE 525 - Natural Resource And Economics**Credits 3**

Emphasis on the application of demand, supply, and price concepts in the study of natural resource use, policies, and management. Interdependence between environmental quality and economic actions are examined through discussion of property rights, economic incentives, externalities, and economic components of environmental policies.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120 or ECON 110 and junior standing.

Typically Offered

Fall

AGECE 535 - Agricultural Sales**Credits 3**

Agricultural Sales will introduce students to the role of sales and sales management in the agricultural industry.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or ECON 120 or AGECE 121 or ECON 110.

Typically Offered

Fall, Spring

AGECE 541 - Agricultural Economics and Agribusiness Seminar**Credits 0-18**

Seminars of special interest will be offered upon sufficient demand in selected areas relating to agricultural economics and agribusiness.

Repeat for Credit

Y

Typically Offered

Other

AGEC 550 - Undergraduate Research in Agricultural Economics

Credits 0

Mentored undergraduate research experience in agricultural economics and agribusiness.

Note

Consent of instructor.

Repeat for Credit

Y

Requisites

Prerequisite: AGEC 120 or AGEC 121 or ECON 120

Typically Offered

Fall, Spring, Summer

AGEC 560 - Data Analytical for Agricultural Economics

Credits 3

Advanced collection and applied analysis of agricultural business and economics data for decision making. Applied communication of results and implications.

Note

Students who have not completed AGEC 501 may secure instructor consent if they can verify a working knowledge of regression.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 501

Typically Offered

Fall, Spring

AGEC 570 - Food Manufacturing, Distribution, and Retailing Economics

Credits 3

Advanced study of the economic and business aspects of

the food industry from processing to distribution to retailing. Emerging trends in nutrition, food consumption, food safety and supply chain arrangements along with management and marketing issues in the food industry will be studied.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 318 or MANGT 220.

Typically Offered

Fall, Spring

AGEC 598 - Farm Management Strategies

Credits 3

A study of management concepts, tools, and decision strategies applied to farm firms. Alternative measures of farm business performances, as well as planning and evaluation techniques for an uncertain environment, are examined.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 308, AGEC 500, and AGEC 513 or FINAN 450.

Typically Offered

Fall, Spring

AGEC 599 - Food and Agribusiness Management Strategies

Credits 3

This course integrates the risk, production, marketing, and financial management strategies of agribusiness firms. Special attention is given to the application of economic theory and quantitative analysis to business decision-making processes. In addition to case studies, a variety of analytical techniques will focus on both markets and firms involved in the production and marketing of food commodities.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 318, AGEC 500, and either AGEC 513 or FINAN 450. Recommended Foundation Course: AGEC 515.

Typically Offered

Fall, Spring

AGEC 605 - Price Analysis and Forecasting

Credits 3

The analysis of selected agricultural prices; application of regression analysis to price analysis, the role of futures markets and market efficiency, optimal hedging strategies, commodity option pricing, and price forecasting.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: a course in statistics; AGEC 501; AGEC 505 or ECON 520.

Typically Offered

Spring

AGEC 610 - Current Agriculture and Natural Resource Policy Issues

Credits 3

Current issues in agricultural and natural resource policy from divergent perspectives. Classroom discussion, debate, writing assignments, and student presentations. Current events are analyzed and synthesized from both economic and noneconomic perspectives. Topics may include environmental issues, international agricultural development, the politics of farm programs, and the relationship between technology, agriculture, and society.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 505 and either AGEC 525 or AGEC 411.

Typically Offered

Fall

AGEC 615 - Global Agricultural and Economic Development

Credits 3

This course covers contemporary challenges in global development, with an emphasis on agricultural issues. Students will analyze problems using economic models, and develop empirical skills by learning key data collection concepts and working with survey data. Topics include poverty, technology adoption, agricultural policy, health, and program evaluation.

Note

Three hrs lec per week.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 315 and AGEC 500.
Prerequisite OR Corequisite: AGEC 501.

Typically Offered

Fall

AGEC 623 - International Agricultural Trade

Credits 3

Applied economics of agricultural trade. Emphasis on why trade occurs, current agricultural trade patterns, the effects of agricultural policy on trade, and the institutions of trade.

Repeat for Credit

N

Requisites

Prerequisite: AGEC 505.

Typically Offered

Fall

AGEC 632 - Agribusiness Logistics

Credits 3

Planning for efficient use of transportation, storage and processing facilities in the handling of raw materials and products for agribusiness firms, controlling shipments and inventory in coordination with warehouse and handling operations, and scientific selection of routes, schedules, and equipment.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120, and junior standing.

Typically Offered

Fall

AGECE 641 - Agricultural Economics and Agribusiness Seminar

Credits 1-18

Seminars of special interest will be offered upon sufficient demand in selected areas relating to agricultural economics and agribusinesses.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and instructor permission.

Typically Offered

Other

AGECE 680 - Risk Management

Credits 3

Analytical concepts and quantitative tools to make better decisions in risky situations. Identifying various types of risk an operation faces, measuring the degree of risk, and exploring ways to manage risk. Includes portfolio analysis, futures and options, contracting, and insurance. Emphasis on computer applications. Topics are focused on agriculture but are applicable to other industries and household decisions.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 420, AGECE 513 or FINAN 450, and a

course in statistics.

Typically Offered

Spring

AGECE 700 - Applied Agribusiness Economics

Credits 3

Applications of economic principles to problems of agricultural production and agribusinesses. Demand theory and economic forecasting will be used to examine changes in demand and business trends. Cost minimization and profit maximization will be used to examine firm and market issues.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100, ECON 120 or AGECE 120.

Typically Offered

Summer

AGECE 701 - Introduction to Computer Decision Tools for Agribusiness

Credits 1

Development of decision tools for agribusiness using spreadsheets. Topics include internet as a data source, budget development and analysis, financial calculations, regression, search techniques, and optimization.

Repeat for Credit

N

Requisites

Prerequisite: CIS 110.

Typically Offered

Spring

AGECE 710 - Comparative Food and Agriculture Systems

Credits 3

This course provides a comparative analysis of the business and economic situation of the food and agriculture sector

around the world. The course will cover the European Union, the Former Soviet Union, MERCOSUR, and Southeast Asia, Oceania and possibly other regions. The course will focus briefly on the historical development, the current situation, and the future outlook of the food and agriculture sector. Upon completion of this course, students will be able to evaluate the comparative advantage of the United States in the production of food and fiber.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or AGECE 121 or ECON 120.

Typically Offered

Spring, Summer

AGECE 712 - Optimization Techniques for Agricultural Economics

Credits 3

Application of optimization techniques including linear programming and nonlinear programming for research and decision analysis in agricultural economics.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 500 and AGECE 501, or graduate standing.

Typically Offered

Spring

AGECE 713 - Agribusiness Financial Management

Credits 3

This course covers financial management, long-term investment analysis, the performance of alternative investments, and the theory of efficient markets. Topics covered include comparative financial analysis, short-term budgeting, and capital budgeting. Applications include agribusiness decision making and project analysis.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231, AGECE 513.

Typically Offered

Spring

AGECE 720 - Agribusiness Risk Management

Credits 3

Various forms of risk inherent to firms operating in agricultural and food product markets are explored. Risk management techniques including diversification, insurance, forward contracting, hedging and options are examined through applied problems with the use of simulation. Emphasis is placed on managing risk associated with input prices, output prices, enterprise organization and financial instruments.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 713 and AGECE 761.

Typically Offered

Fall

AGECE 730 - Applied Agribusiness Logistics

Credits 3

A study of agribusiness logistics and the fundamental concepts underpinning logistical decisions and their impact on a firm's sustainability. Topics include supply chain management, transportation and storage, contracting and out sourcing, strategic logistic planning, network analysis, and B2B e-commerce in food and agriculture. Focus will be on agribusiness logistics issues in grain and grain-based food supply chains and in the livestock and meat supply chains, including global logistics.

Repeat for Credit

N

Requisites

Prerequisite: AGECE 120 or ECON 120, and AGECE 505.

Typically Offered

Spring

AGECE 735 - Sales and Marketing in the Global Animal Health Industry

Credits 3

This course is designed to introduce students to marketing and sales in the complex world of animal health industry. Understanding product life cycles; product development; forecasting; planning; positioning and branding; as well as promotion and compliance. Markets addressed include business to business food animal markets and companion animal consumer markets.

Repeat for Credit

N

Typically Offered

Summer

AGEC 740 - Seminar in Agricultural Economics Analysis**Credits 0-18**

Seminar on methods of economic analysis will be offered upon sufficient demand.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGEC 750 - Agricultural Economics and Agribusiness Problems**Credits 1-18**

Agricultural Economics and Agribusiness Problems

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and consent of the instructor.

Typically Offered

Fall, Spring, Summer

AGEC 751 - Risk Management Fellows Seminar**Credits 1**

This course serves as The Center for Risk Management Education and Research Student Fellows seminar course. Students will conduct a risk management research project.

Note

Consent of the instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing, admitted to the Risk Management Fellows Program

Typically Offered

Fall, Spring, Summer

AGEC 760 - Applied Econometric Analysis**Credits 3**

Use of econometrics to enhance agribusiness decision making is the focus. Concepts of simple and multiple regression and limited dependent variable models are presented. Econometric issues of functional form, relevant variables, predictive performance, and model diagnostics will be examined. Numerous applications of techniques to agribusiness problems are used.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 and AGEC 701.

Typically Offered

Spring

AGEC 761 - Optimization Techniques for Agribusiness**Credits 2**

This course is an introduction to optimization techniques designed to provide quantitative support for agribusiness decision making. Upon completion of this course, students will be able to construct and evaluate optimization models useful for evaluating linear problems, integer problems, and nonlinear program.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 and AGECE 701.

Typically Offered

Fall

AGECE 770 - International Agribusiness and Policy Analysis**Credits 3**

Policies affecting agribusiness firms will be examined. These topics may include U.S. agricultural policies, fiscal and monetary policies, international trade agreements, environmental issues, and current policies influencing agribusiness firms.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110 and AGECE 701.

Typically Offered

Fall

AGECE 780 - Economics of the Global Animal Health Industry**Credits 3**

Economic Issues in the Global Animal Health Industry (AGECE 780) provides a forum to study the economics and business challenges and opportunities confronting the animal health industry. Policy issues in the various significant animal sectors are examined to provide tools to develop the appropriate responses to ensure sustainable superior performance.

Repeat for Credit

N

Typically Offered

Spring

AGECE 805 - Agricultural Marketing**Credits 3**

The study of the demand for supply of agricultural

commodities, alternative market structures, the dynamics of marketing institutions that affect market structures, governmental intervention in agricultural markets, futures markets in agriculture, and international agricultural commodities trade.

Repeat for Credit

Y

Requisites

Prerequisite: AGECE 505 or ECON 520.

Typically Offered

Spring

AGECE 810 - Price, Income and Trade Policies in Agriculture**Credits 3**

This course examines the effects of agricultural policies on the welfare of society and the distribution of benefits and costs within the global market. Modern tools are developed to examine the causes and consequences of policies.

Repeat for Credit

Y

Requisites

Prerequisite: AGECE 500 or ECON 520, ECON 510.

Typically Offered

Spring

AGECE 812 - Advanced Farm Economics**Credits 3**

A study of managerial techniques and processes applied to farm firms involved in production and marketing of agricultural products. This study includes managerial planning, evaluation, and control of farm businesses.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: AGECE 308.

Typically Offered

Fall

AGEC 815 - International Agricultural Development**Credits 3**

To study the principles of economic development when applied to the development of the agricultural sector. This includes the examination of national and international strategies and policies that inhibit and/or encourage the development of the agricultural sectors in low income countries. Individual study is encouraged to meet student interest: (a) in understanding the process and including an appreciation of the interdependence between low and high income countries and (b) receiving an introduction to agricultural project analysis.

Repeat for Credit

Y

Requisites

Prerequisite: AGECE 500 or ECON 520.

Typically Offered

Spring-Even Years

AGEC 823 - Production Economics II**Credits 3**

Economic theories of choice under conditions of imperfect knowledge (i.e. under risk and uncertainty) and the application of these theories to production decisions.

Repeat for Credit

Y

Requisites

Prerequisite: AGECE 500 or consent of instructor.

Typically Offered

Fall

AGEC 825 - Natural Resource Policy**Credits 3**

The economic tolls of welfare analysis, non-market valuation, and dynamics are used to evaluate natural resource use, natural resource policies, and conflicts among users, conservationists, and preservationists.

Repeat for Credit

Y

Requisites

Prerequisite: AGECE 505 or ECON 520; and MATH 205.

Typically Offered

Fall

AGEC 840 - International Markets and Agricultural Trade**Credits 3**

International Markets and Agricultural Trade bridges the fundamental concepts of international trade with the practical analysis of trade policies. The course seeks to develop a solid foundation for future practitioners at industry or public institutions and for those who will undertake more in-depth empirical research involving trade issues.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 720.

Typically Offered

Fall

AGEC 880 - Agribusiness Industry Structures**Credits 3**

Applied industrial organization and competitive relationships in agriculture markets. Emphasis on the role of bargaining power, vertical coordination and integration, contracting, and other forms of vertical control. Product differentiation, branding and advertising of commodities and anti-trust laws.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 720, ECON 830 (or concurrent enrollment).

Typically Offered
Spring

AGEC 890 - Advanced Food and Agribusiness Management

Credits 3

The objective of the course is to demonstrate how economic concepts underscore strategic management principles. Applications to food and agribusiness firms are used to show how managers and firms function when the assumptions of perfect competition are relaxed. Students will complete a market analysis study as part of the course requirements.

Repeat for Credit
Y

Requisites
Prerequisite: AGECE 599.

Typically Offered
Fall

AGEC 898 - Agricultural Economics Master's Report

Credits 1-18

Master's report.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

AGEC 899 - Agricultural Economics Master's Research

Credits 1-18

Research for master's thesis.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

AGEC 901 - Research Methods in Economics

Credits 3

A study of scientific methodology in economic research including the history of various debates regarding methodology in economics. The course also deals with problem definitions, formulation of hypotheses, listing of hypotheses, and presentation of research results.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing.

Typically Offered
Spring

AGEC 905 - Agricultural Demand and Commodity Marketing

Credits 3

A study of the demand for and supply of farm products, price information and markets, the causes of price variations and instability, the dynamic analysis of agricultural prices.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: AGECE 805, ECON 930, ECON 945.

Typically Offered
Spring

AGEC 923 - Economics of Agricultural Production

Credits 3

A study of agricultural production response to prices; methods of estimating supply response and price expectations; the effects of government and institutions on agricultural supply and the role of risk, technical change, and the number and size of farms on agricultural supply.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 830, AGECE 823, ECON 945.

Typically Offered

Fall

AGECE 925 - Advanced Resource and Environmental Economics

Credits 3

Dynamics analysis of natural resource and environmental problems, including the optimal extraction of nonrenewable resources, optimal management of renewable resources, and the optimal regulation of stock pollutants.

Note

Three hour recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 905, ECON 945.

Typically Offered

Spring

AGECE 936 - Quantitative Topics in Agricultural Economics

Credits 3

A study of recent developments reported in the literature concerning quantitative methods of analysis in agricultural economics and economics. The study will include assigned projects to apply selected techniques of analysis.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 930.

Typically Offered

Spring

AGECE 940 - Seminar in Agricultural Economics

Credits 1-18

Problems and current developments in agricultural economics.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGECE 955 - Independent Study of Advanced Topics in Agricultural Economics

Credits 1-18

Advanced independent study of an agricultural economics topic based upon a student proposal approved by the student's supervisory committee

Repeat for Credit

Y

Requisites

Prerequisite: Completion of 24 credits of graduate study.

Typically Offered

Fall, Spring, Summer

AGECE 999 - Agricultural Economics PhD Research

Credits 1-18

Research for Ph.D. Dissertation.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGED 100 - Orientation in Agricultural Education

Credits 1

Develop an understanding to the expectations of college and program responsibilities. A foundation of the high quality teaching and secondary agriculture programs. Active learning will include discussions, applications and a day long tour of education systems.

Note

Required of all freshmen entering the Agricultural Education major.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education majors only

Typically Offered

Fall

AGED 101 - Foundations of Diversified Agriculture

Credits 1

Exploration of the program requirements, responsibilities, methodology, organization, current trends, and issues. Active involvement in discussions of the agriculture industry and design a program plan to meet career aspirations.

Repeat for Credit

N

Typically Offered

Fall

AGED 210 - Equipment and Material Management

Credits 1

Provides a foundation for teaching and managing laboratories related to power, structural and technical systems. Laboratory safety procedures and practices will be applied to the instructional setting. Includes material selection & management, project planning & design and facility management.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education Major.

Typically Offered

Fall, Spring

AGED 286 - Topics in Agricultural Education

Credits 0-3

Examination of current topics in undergraduate agricultural communications.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGED 296 - Problems in Agricultural Education

Credits 1-3

Independent guided studies in any of the many fields associated with agricultural education.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGED 300 - Introduction to Agricultural Education

Credits 1

Introduction to the program responsibilities, methodology, organization, current trends and issues, and future direction of programs in agricultural education. Students will be actively involved in the discussion and application of course material both in the classroom and in early field experiences conducted as a part of this course.

Repeat for Credit

N

Typically Offered

Fall

AGED 301 - Diversified Agriculture Foundations**Credits 1**

Discussion and exploration of the program requirements, distance learning considerations, organization, current trends, and issues. Design a program plan to meet career aspirations in the agriculture industry.

Repeat for Credit

N

Typically Offered

Fall, Spring

AGED 305 - Field Experience in Agricultural Education**Credits 1**

A course for prospective teachers to help bridge the gap between classroom theory and student teaching. Emphasis will be on observation of and participation in school and community organizations and programs.

Repeat for Credit

N

Requisites

Prerequisite: AGED 100 or AGED 101 or AGED 300 or AGED 301 or concurrent enrollment.

Typically Offered

Fall, Spring

AGED 400 - Leadership and Professional Development in Agricultural Education**Credits 2**

This course provides an introduction to the leadership skills needed in the role of FFA advisor and professional agricultural educator including career, professional, and student leadership development and FFA chapter management.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education Major

Typically Offered

Spring

AGED 430 - Leadership Development in Agricultural Youth Organizations**Credits 3**

Facilitate leadership development in youth through participation in FFA. Explores youth development stages, how to help youth grow their leadership skills through agriculture youth organizations and activities, and organizational structures.

Repeat for Credit

N

Requisites

Agricultural Education majors only

Typically Offered

Fall or Spring

AGED 433 - Agricultural Project Management**Credits 3**

Applied project management methodology, tools, and techniques for agricultural industries. Project organization, planning, execution, and communications; the project life cycle; risk analysis; and best practices in project management.

Repeat for Credit

N

Typically Offered

Fall or Spring

AGED 434 - Undergraduate practicum in agricultural-related occupations

Credits 1-3

Related occupational or professional experiences in approved industry, school, Cooperative Extension Service, or similar agency setting under faculty supervision.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Summer

AGED 486 - Topics in Agricultural Education

Credits 0-3

Examination of current topics in undergraduate agricultural education.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGED 490 - Undergraduate Research in Agricultural Education

Credits 0-3

This course uses qualitative, quantitative or mixed methods to conduct an agricultural education research project. A faculty supervisor will assist students through the stages of identifying, conducting and reporting the results of a social science research project connected to an agricultural education topic.

Note

Instructor permission

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AGED 500 - Methods of Teaching Agriculture in the Secondary and Middle Schools

Credits 3

Principles of teaching applied to content area instruction in the secondary and middle schools; motivation; organization of subject matter; lesson planning; evaluation and reporting; challenging the levels of ability; organization and management of the classroom; methodology and materials of the secondary schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315, EDSP 323, and EDCI 320.

Concurrent enrollment required for EDSEC 455, EDSEC 477, AGED 520, AGED 600, and EDSEC 525.

Typically Offered

Fall

AGED 520 - Block II Lab: Content Area Methods and Field Experience

Credits 2

This field-based experience provides the opportunity for students to plan, teach, and evaluate agricultural education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315, EDSP 323, and EDCI 320.

Concurrent enrollment required for EDSEC 455, EDSEC 477, AGED 500 and EDSEC 525.

Typically Offered

Fall

AGED 533 - Educating the Public about Agriculture

Credits 3

Organization and preparation of materials and methods used in educating public audiences about agriculture

through non-formal settings, businesses, and extension disciplines.

Repeat for Credit

N

Typically Offered

On sufficient demand

AGED 537 - Planning Programs in Extension & Non-Formal Education

Credits 3

Principles and procedures used in planning and conducting Extension programs. Including workshops, trainings and 4-H programming.

Repeat for Credit

N

Typically Offered

Fall, Spring

AGED 600 - Senior Seminar in Agricultural Education

Credits 1

Discussion and application of Block II learning outcomes in the student to professional educator transition. Topics will include professional development, licensure, professional opportunities and the community of Agricultural and Extension Education.

Repeat for Credit

N

Requisites

Requisite: AGED 500

Typically Offered

Fall

AGED 615 - Laboratory Instructional Techniques in Teaching AgriScience

Credits 3

Provides knowledge and skills to design, organize, and conduct programs in agriscience instruction in secondary agricultural education. Experiences in lab planning, safety

and student management.

Repeat for Credit

Y

Typically Offered

Fall, Summer

AGED 620 - Principles and Philosophy in Agriculture and Career and Technical Education

Credits 2

Principles of career and technical education in Kansas and other states and countries; principles and philosophy underlying such education, relation of career and technical education to school objectives and community, state, and national needs.

Repeat for Credit

N

Typically Offered

Fall, Summer

Crosslisted

EDSEC 620

AGED 621 - Program Planning in Agricultural Education

Credits 3

The program development and planning process; development of guides for teaching and evaluating reimbursable secondary programs.

Repeat for Credit

N

Requisites

Agricultural Education majors only.

Typically Offered

Fall

AGED 625 - Inquiry-Based Curriculum in Agricultural STEM and Biotechnology Education

Credits 2

Provides students with knowledge of inquiry-based techniques related to STEM and Biotechnology in the context of Agriculture. Students will experience activities, labs, and projects developed for inclusion in secondary agriculture classrooms. The learning environment will be grounded in specific agricultural content area, offered on a rotational basis (ex.comprehensive agriculture, animal systems, plant systems, ag power and technology, etc).

Repeat for Credit

Y

Requisites

Agricultural Education Majors only

Typically Offered

Fall, Summer

AGED 630 - Exploration of Global Agricultural Education**Credits 3**

Education Abroad for the exploration of the agriculture industry and agricultural education system in an international location.

Repeat for Credit

Y

Typically Offered

Spring, Summer

AGED 635 - Inquiry and Literacy in Agricultural STEM and Biotechnology**Credits 3**

Knowledge of inquiry-based instruction in STEM and Biotechnology in the context of Agriculture. Literacy and reading techniques will be highlighted. Includes activities, labs, projects, and literacy developed for inclusion in secondary agriculture classrooms.

Repeat for Credit

N

Requisites

Agricultural Education majors only

Typically Offered

Fall or Spring

AGED 704 - Extension Organization and Programs**Credits 3**

Development and objectives of Cooperative Extension and other university adult education programs; with emphasis on programs and procedures.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

On sufficient demand

AGED 705 - Organization Problems in Teaching Agricultural Mechanics**Credits 2-3**

Analysis of the agricultural mechanics course of study; needs and interests of students; learning difficulties; skills and technical knowledge required; correlation with agriculture; application of laws of learning to the teaching process; determination of objectives.

Repeat for Credit

N

Requisites

Prerequisite: EDSEC 586.

Typically Offered

On sufficient demand

AGED 706 - Principles of Teaching Adults in Extension**Credits 3**

Methods and principles of adult teaching with emphasis on Cooperative Extension Service; application to various adult education programs.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

On sufficient demand

AGED 732 - Leadership Analysis Through Film**Credits 3**

Builds upon the study of leadership theory by allowing students to analyze, reflect, synthesize, and apply leadership theories, models and concepts in the context of film. The course materials encourage students to reflect, synthesize, analyze, and apply the information learned from major leadership theories and apply them to various scenarios and situations demonstrated in selected films.

Repeat for Credit

N

Typically Offered

Summer

AGED 734 - Practicum in Agriculture-Related Occupations**Credits 1-6**

Related occupational or professional experiences in approved industry, school, Cooperative Extension Service, or similar agency setting under faculty supervision.

Note

Consent of instructor

Repeat for Credit

N

Typically Offered

On sufficient demand

AGED 735 - Methods of Technological Change in Agriculture**Credits 3**

Structured approach for dealing with the organizational and human aspects of technology transition, including the key concepts of resistance and change management,

organizational change, communications, and processes by which professional change agents influence the introductions, adoption, and diffusion of technological change.

Repeat for Credit

N

Typically Offered

Fall, Spring

AGED 736 - Practicum in Extension Education**Credits 1-6**

Related occupational or professional experiences in approved industry, school, Cooperative Extension Service, or similar agency setting under faculty supervision.

Note

Consent of instructor

Repeat for Credit

N

Typically Offered

On sufficient demand

AGED 737 - Teaching Diverse Learners in Agricultural Education**Credits 3**

Practical application of learning theories as they apply to diverse learners. Specific instruction relevant to secondary agricultural instructors such as Supervised Agricultural Experience Projects through the lens of diverse students, global leadership and intercultural competence.

Repeat for Credit

N

Typically Offered

Summer

AGED 738 - Assessing Learning in Agricultural Education**Credits 3**

Develop an understanding and application of assessment

relevant to agricultural education. Students develop, administer, and analyze formal, informal, and performance assessment techniques to monitor and evaluate student learning and guide modification.

Repeat for Credit

N

Typically Offered

Spring

AGED 786 - Topics in Agricultural Education

Credits 1-3

Examination of current topics in agricultural education.

Note

Varied specialized topics will be offered so course may be repeated.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGED 790 - Agricultural Education Methods and Practicum for Teaching and Learning

Credits 3

Principles of teaching applied to agriculture education instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: Must be enrolled in Graduate Certificate for Teaching and Learning or Master of Arts in Teaching.

Typically Offered

Fall

AGED 797 - Agricultural Education Colloquium I

Credits 2

This course explores key concepts within the field of Agricultural Education. Focus will be on advancing the development of disciplinary content knowledge and pedagogical content knowledge.

Repeat for Credit

N

Requisites

Prerequisite: Enrolled in the Master of Arts in Teaching program.

Typically Offered

Summer

AGED 798 - Agricultural Education Colloquium II

Credits 2

This course explores additional key concepts within the field of Agricultural Education. Focus will be on advancing the development of disciplinary content knowledge and pedagogical content knowledge.

Repeat for Credit

N

Requisites

Prerequisite: AGED 797. Enrollment in the Master of Arts in Teaching.

Typically Offered

Fall

AGED 799 - Agricultural Education Colloquium III

Credits 2

Class explores the content knowledge of the candidate in regards to the Agricultural Education content curriculum, identifies areas of strength and weakness in content knowledge, and provides enrichment and remediation to prepare the candidate for the internship experience.

Repeat for Credit

N

Requisites

Prerequisite: AGED 798. Enrollment in the Masters of Arts

in Teaching.

Typically Offered

Intersession

AGED 800 - Research Methods in Agricultural Education and Communications

Credits 3

This graduate-level course will focus on applying the principles, practices, and strategies for conducting research in the social sciences, particularly dealing with the interface of the human dimension in the agricultural and natural sciences.

Note

Great Plains Ag*IDEA Course Delivery.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AGED 810 - Social Data Analysis in Communications and Agricultural Education

Credits 3

A course in measurement and analysis as related to social science research and evaluation. The course takes an applied approach to organizing data, analyzing data according to research and evaluation objectives and/or hypotheses, using descriptive and inferential statistics, and interpreting data. Students gain practical experience in data entry and using SPSS for calculating statistics through laboratory exercises.

Repeat for Credit

N

Typically Offered

Fall

AGED 820 - History and Philosophy of Agricultural and Extension Education

Credits 3

The primary purpose of this course is to provide the student with an examined grounding in the seminal events and

people in the history of agricultural and extension education (history), principle divisions of thought (philosophies), and decisions made (policy), resulting in the current state of affairs in agricultural and extension education. The convergence of these factors has a notable impact on the current challenges and future direction of agriculture and extension education.

Note

Great Plains Ag*IDEA Course Delivery.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AGED 823 - Agricultural Education for Beginning Teachers

Credits 1-3

Securing and organizing information and planning teaching activities which will help the beginning vocational agriculture teacher.

Repeat for Credit

N

Requisites

Prerequisite: Graduation from the curriculum in agricultural education.

Typically Offered

Fall, Spring

AGED 824 - Young Farmer and Adult Farmer Education in Agriculture

Credits 2-3

Organization, objectives, and procedures of conducting young farmer and adult farmer classes. Designed for teachers in service.

Note

Experience in teaching vocational agriculture.

Repeat for Credit

N

Typically Offered

On sufficient demand

AGED 830 - The History and Leadership of the Land Grant University

Credits 3

The course will provide a historical overview of the evolution and development of land-grant colleges/universities. It will reflect on the fundamental beliefs of those who conceptualized and implemented the land-grant college and university system. The course will enable students to examine early public mandates and subsequent successes of these special institutions of higher education, as well as evaluate significant education, research, and public service developments and new initiatives needed for land-grants to effectively serve society in the future. It is expected that students will gain an understanding of and benefits derived from the institutions that comprise the land-grant college and university family, as well as envision developments and opportunities that will mold the future of these special institutions that represent the land-grant legacy.

Repeat for Credit

N

Typically Offered

Fall

AGED 831 - Survey Development in Agricultural Education and Communications

Credits 3

Provide the expertise required to design and conduct survey research. Instruments (scales/questionnaire) used in data collection processes and acquire the statistical skills necessary to develop and test these survey instruments, SPSS and Qualtrics.

Repeat for Credit

N

Typically Offered

Summer

AGED 832 - Foundations and Theory of Agricultural Leadership

Credits 3

Organizational concepts of leadership; administrative styles and structures; leadership for boards, committees, governmental bodies, and review of societal and political

processes.

Repeat for Credit

N

Typically Offered

Fall

AGED 834 - International Agriculture and Extension Education

Credits 3

This course focuses on a broad range of topic areas in the field of extension education as it impacts agriculture and rural community development. The primary purpose is to further students' understanding about extension systems' influence on agricultural development and the interface of agriculture with rural communities throughout the world. Emphasis will be placed upon research, theory, history and conceptual models of extension for establishing a strong philosophical foundation.

Repeat for Credit

N

Typically Offered

Spring, Summer

AGED 838 - Qualitative Design in Agricultural Education and Communications

Credits 3

Overview of philosophies, approaches toward, design, data collection, analysis and reporting of qualitative research.

Repeat for Credit

N

Typically Offered

Fall, Spring

AGED 840 - Advanced Theory and Methods of Teaching Agriculture

Credits 3

This course will use contemporary and foundational theory and research on teaching and learning processes in the application and organization of instructional methods and techniques in formal and non-formal educational settings

particularly in agriculture, food and natural resources disciplines.

Repeat for Credit

N

Typically Offered

Fall, Spring

AGED 850 - Curriculum Development in Agriculture I

Credits 2-3

Curriculum problems; planning local programs in agriculture; developing facilities and plans for meeting current and advanced problems in the teaching of agriculture.

Note

One year of teaching in agriculture.

Repeat for Credit

Y

Typically Offered

Spring

AGED 852 - Curriculum Development in Agriculture II

Credits 2-3

Continuation of AGED 850.

Repeat for Credit

Y

Requisites

Prerequisite: AGED 850.

Typically Offered

Summer

AGED 855 - Field Studies in Agricultural Education

Credits 2-3

Planning, organizing, and coordinating the various phases of the local program of vocational education in agriculture.

Note

Experience in teaching agriculture.

Repeat for Credit

Y

Typically Offered

On sufficient demand

AGED 858 - Program Planning and Evaluation in Agricultural and Extension Education

Credits 3

This course is designed for students who are interested in the development and evaluation of agricultural and extension education programs. The course is designed to help students in the following areas: Acquire an understanding of program development from theory to practice; Strengthen their skills in planning, designing, implementing, evaluating, and accounting for educational programs of targeted audiences; and Provide application of program planning and evaluation concepts through experiential learning and class projects.

Repeat for Credit

N

Typically Offered

Spring

AGED 859 - Management of Volunteers in Agricultural and Extension Education

Credits 3

This course is intended to prepare students to be effective managers of volunteer programs, or to challenge those students already engaged in those roles to improve on their existing skills. Theory will be emphasized in the course, only in so much as it is essential to be grounded in theory in order to apply it. Major topics of the course will include, but are not limited to: volunteer recruitment, training, evaluation and reward. This is an active course where students will be required to be active in and outside of class sessions.

Repeat for Credit

N

Typically Offered

Summer

AGED 860 - Program Evaluation in Agricultural and Extension Education

Credits 3

Evaluation principles, models, and procedures used in developing and analyzing agricultural, vocational, technical, and extension education programs; role of comprehensive evaluation in needs assessments, program planning, program implementation, and the marketing of outcomes to major stake-holders; designs for evaluating agricultural and extension programs. Evaluation logic model is presented to identify and describe program inputs, activities, outputs, and outcomes.

Note

Great Plains Ag*IDEA Course Delivery.

Repeat for Credit

N

Typically Offered

Spring

AGED 880 - Portfolio Development in Agricultural Education and Communications

Credits 0-1

The final semester of the MS in Ag Ed and Comm non-thesis/project option requires the completion of a portfolio. Completion, scoring and tracking will be completed through this course.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGED 890 - Master's Project

Credits 1-3

Students select and prepare a project designed to improve their professional practice. It may be the construction of a professional portfolio or project to represent the student's learning throughout the master's degree program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AGED 899 - Master's Thesis

Credits 1-6

A master's thesis presents the results of an original investigation or a problem or topic within the student's classroom or educational field approved by the candidate's supervisory committee.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 101 - Agronomy Orientation

Credits 1

Introduction to agronomy options, activities, resources, and careers. Required of all freshmen in agronomy at K-State.

Note

One hour lecture per week.

Repeat for Credit

N

Typically Offered

Fall

AGRON 115 - Special Topics in Agronomy

Credits 1-6

Discussion and lectures on selected topic areas related to Agronomy.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 120 - Crop Science

Credits 3

Principles underlying practices used in the culture of grain

and forage crops. Crop classification, structure, growth, and improvement. Crop response to environmental factors, soils, and pests and associated management practices. A basic course for majors in agronomy and others interested in crop production.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

AGRON 121 - Crop Science Laboratory

Credits 1

Hands-on application of principles underlying practices used in the culture of grain and forage crops. Crop classification, crop botany, crop development, crop management, and problem solving for majors in agronomy and others interested in crop production.

Repeat for Credit

N

Requisites

AGRON 120 or concurrent enrollment

Typically Offered

Fall, Spring

AGRON 202 - Introduction to Precision Ag Software

Credits 3

Introduction to software commonly used for the management and analysis of various forms of agronomic data pertaining to soils, crops, and weather for the purpose of generating site-specific recommendations in crop production.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AGRON 205 - Soils

Credits 3

Fundamental chemical, physical, and biological properties of soils; significance of these properties to soil classification and mapping, soil-plant relationships, soil management, and the environment.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 or 210.

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 206 - Soils Laboratory

Credits 1

Hands-on lab and field experience in fundamental chemical, physical, and biological properties of soils; significance of these properties to soil classification and mapping, soil-plant relationships, soil management, and the environment.

Note

Two hour laboratory each week.

Repeat for Credit

N

Requisites

Prerequisite or corequisite: AGRON 205

Typically Offered

Fall, Spring

AGRON 251 - Range Management

Credits 3

Fundamental ecological principles of production, conservation, and use of grasslands. Application of these fundamental principles to management.

Note

Three hours lecture each week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 260 - Field Identification of Range and Pasture Plants**Credits 1**

Identification of range and pasture plants through observing them in their natural environment.

Note

Two lab periods each week for first half of the semester.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 302 - Agronomy International Study Tour**Credits 0-6**

An experiential learning course to prepare students for and to immerse them in an international study tour of selected agronomic industries. The topics vary by the tour and the industries studied.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

ENTOM 202

K-State 8

Global Issues and Perspectives

AGRON 325 - World Food Crops**Credits 3**

An introduction to the production and consumption patterns of major global food crops. Examine relationship between staple crops and food security. Guest speakers from around the world will discuss important crops grown in their home country. Hands-on activities with edible plant parts and food products.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

AGRON 330 - Weed Science**Credits 3**

For those interested in crop production, crop protection, and agricultural education. Considers the origin of weeds, their relations to crops, and control systems emphasizing cultural, mechanical, biological, and chemical practices. Includes weed identification.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 120.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 335 - Environmental Quality**Credits 3**

An examination and survey of topics in environmental quality. Includes classification of soil, air, and water pollutants and their interaction with the environment, including the human food chain. Discussion of remediation techniques, risk assessment, and environmental legislation.

Note

Three lectures a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: CHM 110 or CHM 210.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 350 - Plant and Seed Identification**Credits 2**

Identification of crops and weeds by seed and vegetative characteristics. Analysis of seed samples for impurities.

Note

Four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

AGRON 360 - Crop Growth and Development**Credits 3**

Comparative growth and development of warm- and cool-season monocot and dicot crops. Environmental influences on growth and development processes and management techniques to minimize stresses.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 or CHM 210. Recommended Foundation Courses: AGRON 120 and AGRON 205.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 375 - Nutrient Cycling and Fertilizer Management**Credits 3**

Detailed information on nutrient cycling and management in soils and agroecosystems, including plant nutrition, nutrient interactions with soil, nutrient availability, and fertilizer management. Numerous soil biological, physical, and chemical properties on nutrient availability to crops will be emphasized.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 205. Recommended Foundation Course: AGRON 120.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AGRON 380 - Introduction to Grassland Monitoring and Assessment

Credits 2

Vegetation sampling techniques used in rangeland research and for grassland monitoring and assessment. Use of statistics for sampling, analysis, and presentation of data.

Note

Meets during first half of the semester. Four hours lecture each week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: AGRON 251 and STAT 240.

Typically Offered

Fall-Even Years

AGRON 381 - Introduction to Grassland Monitoring and Assessment Lab

Credits 1

A field laboratory course designed as a companion to AGRON 380. Focus on methods used for determination of biomass, basal cover, frequency, and density. Additional time will be spent on basic statistics, experimental design, and analyzing data sets.

Note

Meets during the first half of the semester. One hour of lecture and one lab each week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 380 or concurrent enrollment.

Typically Offered

Fall-Even Years

AGRON 385 - Soil Analysis and Nutrient Recommendations

Credits 2

Detailed information on (1) techniques for soil sample

collection, (2) chemical methods for routine soil analysis, (3) development of fertilizer recommendations, and (4) fertilizer characteristics. Laboratory exercises reinforce the theoretical principles presented in lectures.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 375 or concurrent enrollment.

Typically Offered

Spring

AGRON 400 - Undergraduate Topics in Agronomy

Credits 1-3

Special topics in agronomy not completely treated in other courses.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring

AGRON 405 - Internship in Agronomy

Credits 0-3

Supervised professional experience in any agronomic area. One credit is equivalent to 120 hours of supervised and evaluated work experience. Cooperating employers and interns will complete a learning contract and set learning outcomes. Student presentation required upon completion of internship.

Repeat for Credit

Y

Requisites

Prerequisite: AGRON 120 and AGRON 205.

Typically Offered

Fall, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AGRON 415 - Soils Judging

Credits 0-1

Techniques employed in writing descriptions of soil morphology and in classifying soils for intercollegiate soils judging.

Note

Six hours lab a week for the first half of the semester.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: AGRON 205.

Typically Offered

Fall, Spring

AGRON 425 - Forage Quiz Bowl Team

Credits 0-1

Prepare quiz bowl team members with review of forage history, soils and fertility, establishment, grazing management, plant physiology, poisons and toxicity, forage quality, hay and silage, and identification of forages and weeds.

Repeat for Credit

Y

Typically Offered

Fall

AGRON 446 - Introduction to Environmental Soil Physics

Credits 3

A conceptual and quantitative introductory study of vadose zone soil physical properties and processes in relation to the main components of the hydrologic cycle and the soil surface energy balance.

Note

Three hours of lecture a week

Repeat for Credit

N

Requisites

Recommended Prerequisites: AGRON 205 and PHYS 113

Typically Offered

Spring

AGRON 450 - Crops Team

Credits 0-2

Grain grading, seed and plant identification, and seed analysis. Studies lead to participation in intercollegiate crops contest.

Note

Four hours lab a week.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: AGRON 350.

Typically Offered

Fall

AGRON 462 - Range Grasses

Credits 2

Field and laboratory study of range and pasture plants, with special emphasis on grasses and their distinguishing characteristics.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall-Even Years

AGRON 490 - Introduction to Range Management Planning

Credits 3

Inventory and analysis of rangeland resources and development of detailed management plan. Emphasizes range management principles and practices useful in maximizing production from rangelands.

Note

Two hours lecture and one lab each week, may include field trips to ranch operations.

Repeat for Credit

N

Requisites

Recommended Prerequisite: AGRON 251

Typically Offered

Spring-Odd Years

AGRON 502 - International Experience in Agronomy

Credits 0-6

Students will apply knowledge gained in their undergraduate curriculum in a culminating learning experience focused on international crops, soils, and agronomic systems. Topics vary by offering depending on the agronomic systems studied and locations visited.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 120 and AGRON 205 and 8 hours of any AGRON course

Typically Offered

Spring

AGRON 550 - Forage Management and Utilization

Credits 3

Production and utilization of forage crops. Development of forage programs for livestock production, including pasture and stored forages.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 120 and junior standing.

Typically Offered

Spring

AGRON 551 - Forage Management and Utilization Laboratory

Credits 1

Identification of forage species, techniques for estimating forage quality, forage physiology, and field trips.

Note

One two-hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Completion of or concurrent enrollment in AGRON 550.

Typically Offered

Spring

AGRON 598 - Undergraduate Research in Agronomy

Credits 0-18

Independent research experience guided by faculty in crop science, weed science, range science or soil science.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AGRON 600 - Problems in Agronomy

Credits 1-18

Independent study may be chosen in any area of agronomy: genetics, crop improvement, forages, ecology, weed control, plant physiology, crop production, soils, fertility, genesis, or conservation. Study conducted under the

guidance of a faculty member, with topic jointly selected by student and instructor. Course format and number of credit hours determined by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 602 - Agronomy Capstone Experience

Credits 3

A culminating learning experience to apply the knowledge gained by the student in the undergraduate curriculum, to apply the skills of problem-solving and critical thinking, and to develop the ability to work in teams and participate in civil discourses. Current issues in Agronomy will be discussed and a team project will be completed.

Note

Three hours of seminar a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

AGRON 605 - Soil and Environmental Chemistry

Credits 3

A study of inorganic and organic chemistry of soils with a detailed examination of the solid, liquid, and gaseous phases. Includes discussions of mineral solubility, electrochemical and adsorption phenomena, acidity, salinity, and fertility. Emphasis is placed on the biogeochemical cycling of plant nutrients and important soil contaminants.

Note

Three hours of recitation a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 375 or AGRON 205 and CHM 230.

Typically Offered

Spring

AGRON 610 - Biotechnology

Credits 3

The use of biotechnology and molecular genetic approaches in plant and animal sciences. Emphasis is on the use of molecular techniques for plant and animal improvement.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 500 or BIOL 398.

Typically Offered

Fall

Crosslisted

Same as PLPTH 610.

AGRON 615 - Topics in Agronomy

Credits 1-3

Discussion and lectures on important topics in the field of Agronomy.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 620 - Applied Crop Physiology

Credits 3

Study of cultivated crop botany, whole plant and canopy physiology, impact of abiotic (water, temperature, and plant nutrition) and biotic stresses (weeds, insects, and diseases), crop seed physiology, and global climate change effects on crops.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 120 or HORT 201.

Typically Offered

Fall

AGRON 630 - Crop Improvement and Biotechnology

Credits 3

Techniques in basic plant breeding and biotechnology used to genetically improve crops and procedures to increase, distribute, and maintain breeding stocks and varieties.

Note

Two lecture and one two-hour lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: AGRON 120 and ASI 500.

Typically Offered

Spring

AGRON 635 - Soil and Water Conservation

Credits 3

Principles, prediction, and effects of soil erosion from water and wind. Conservation practices for erosion control and promoting soil, water, and air quality. History of soil and water conservation and the Dust Bowl. Past and present government agencies and policies for soil and water conservation.

Note

Two hours recitation and one three-hour lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 205.

Typically Offered

Fall

AGRON 640 - Cropping Systems

Credits 3

Principles for developing and managing cropping systems in the Great Plains for the efficient use of natural resources, primarily water. Emphasis on dryland cropping systems, management of crop rotations, and the plant/soil/environment interaction. Includes the efficient use of natural resources via an understanding of yield limiting factors, impact of crop rotations and cultural practices, climate, plant growth, and development.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 375.

Typically Offered

Fall

AGRON 645 - Soil Microbiology

Credits 3

The nature and function of soil microorganisms in the soil ecosystem. The role of soil microbial activity to soil organic matter, mineral transformations, plant nutrition, and environmental quality.

Note

Three hours lecture each week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 205 or BIOL 255.

Typically Offered

Fall

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 646 - Soil Microbiology Laboratory**Credits 1**

Discuss and perform laboratory procedures for enumerating soil microorganisms, quantifying soil biological activities, and nutrient cycling.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 645 or concurrent enrollment.

Typically Offered

Fall

AGRON 650 - Integrated Weed Management**Credits 3**

The development of weed management systems based on diagnosis of weed and crop problems, understanding crop-weed associations and interactions with the environment, and integrating weed control tactics such as chemical, biological, cultural, and mechanical practices into recommendations.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 330.

Typically Offered

Spring

AGRON 655 - Site Specific Agriculture**Credits 3**

Introduction to spatial analysis and management of agricultural and environmental resources using Geographic

Information Systems (GIS) technology. Emphasis on collecting, displaying, and analyzing spatial or georeferenced soil, crop, or other land surface data.

Note

Two hours lecture and two hours lab.

Repeat for Credit

N

Requisites

Required Pre-requisite: AGRON 202 Recommended Foundation Course: AGRON 375 and GEOG 508 and GEOG 605.

Typically Offered

Spring

AGRON 660 - Grassland Monitoring and Assessment**Credits 2**

Vegetation sampling techniques used in rangeland research and for grassland monitoring and assessment. Use of statistics for sampling, analysis, and presentation of data.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 251 and STAT 240.

Typically Offered

Fall-Even Years

AGRON 661 - Grassland Monitoring and Assessment Lab**Credits 1**

A field laboratory course designed as a companion to AGRON 660. Labs will consist of methods used for determination of biomass, basal cover, frequency, and density. Additional time will be spent on basic statistics, experimental design, and use of the microcomputer in analyzing data sets.

Note

Meets during the first half of the semester.

One hour lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AGRON 660

Typically Offered

Fall-Even Years

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AGRON 662 - Rangeland Watershed Management

Credits 3

Study of the management of physical/biological settings and processes along with human activities on water and watersheds considering preventative and restorative strategies in a natural resource rangeland setting. Web-based distance AG*IDEA course.

Note

Web-based distance AG*IDEA course.

Repeat for Credit

N

Typically Offered

Spring

AGRON 665 - Soil Genesis and Classification

Credits 3

Factors and processes of soil formation, classification of soils according to soil taxonomy, and use of soil survey information. Practical field experience describing soil properties. Required field trips.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GEOL 100 or AGRON 205.

Typically Offered

Spring

AGRON 670 - Range Management Problems

Credits 1-18

Range Management Problems

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 680 - Plant Genetics

Credits 3

Concepts and application of basic genetic principles in higher plants.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 500 or BIOL 398. Recommended Foundation Course: AGRON 610 and AGRON 630.

Typically Offered

Spring

AGRON 681 - Range Ecology

Credits 3

Application of ecological principles to range ecosystem management. Study of plant-soil-animal interactions with rangelands, and discussion of plant succession, environmental influences, and ecological concepts.

Note

Two hours recitation a week and one lab credit consisting of field trips to representative range areas.

Repeat for Credit

N

Requisites

Recommended prerequisite: AGRON 251 and BIOL 529.

Typically Offered

Spring-Even Years

AGRON 682 - Grassland Fire Ecology**Credits 3**

The course is designed to describe the ecological effects of fire on grassland ecosystems. It also provides insight into the history of fires, the people who use them and why, the parts of a fire, how fires behave in relation to fuel and weather, and the conducting and safety of prescribed burns.

Note

Web-based distance AG*IDEA course.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

AGRON 695 - Climate Change and Agriculture**Credits 3**

Impact of climate and climate change on agricultural systems and soil and water resources at global and regional scales. Discussion on adaptation and mitigation strategies including economics and policies that affect agriculture.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered

Spring-Odd Years

AGRON 700 - Agricultural Meteorology**Credits 3**

Fundamental concepts of meteorology and climatology and their applications to agriculture. Use of weather data to study meteorological variables and to estimate relevant parameters and processes, such as crop growth, development, yield, evapotranspiration, and soil water budget.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: PHYS 113.

Typically Offered

Fall-Even Years

AGRON 720 - Nutritional Improvement of Food Crops**Credits 3**

Discussion of current genetic and breeding efforts to improve the nutritional value of food crops, focusing on vitamins, minerals, amino acids, fatty acids, and phytonutrients. Impact of nutritionally-improved crops in food security.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Spring-Odd Years

AGRON 732 - Introduction to Plant Resistance to Pests**Credits 2**

Basic concepts of the biology, ecology, genetics and breeding for pest resistance in plants.

Note

Four hours lecture and discussion a week. To meet the first half of semester.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 300 or PLPTH 500 or ENTOM 312, and one course in plant or animal genetics.

Typically Offered

Fall-Even Years

Crosslisted

PLPTH 732, ENTOM 732

AGRON 746 - Environmental Soil Physics**Credits 3**

A conceptual and quantitative introductory study of vadose zone soil physical properties and processes in relation to the main components of the hydrologic cycle and the soil surface energy balance.

Note

Three hours of recitation a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: AGRON 205 and PHYS 113.

Typically Offered

Spring

AGRON 775 - Advanced Nutrient Cycling and Fertilizer Management**Credits 3**

Detailed information on nutrient cycling and management in soils and agroecosystems, including plant nutrition, nutrient interactions with soil, nutrient availability, and fertilizer management. Numerous soil biological, physical, and chemical properties on nutrient availability to crops will be emphasized. Students will independently assess nutrient availability in soils and develop nutrient management plans for production systems.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Standing and a soils course.

Typically Offered

Spring

AGRON 781 - Ecology of Invasive Species**Credits 3**

Ecological principles and their application to invasive species. Discussion of population, community and ecosystem level characteristics affecting a wide variety of invasive plant and animal species. Discussions will include current global consequences and governmental policies/programs designed to limit the spread of invasives.

Note

Web-based distance AG*IDEA course.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

AGRON 790 - Range Management Planning**Credits 3**

Inventory and analysis of rangeland resources and development of detailed management plan. Emphasizes range management principles and practices useful in maximizing production from rangelands.

Note

Two hours recitation a week and one lab credit including field trips to ranch operations.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 251.

Typically Offered

Spring-Odd Years

AGRON 800 - Advanced Problems in Agronomy**Credits 1-3**

Independent study of a specific problem in agronomy under the guidance of a member of the department's graduate faculty. For non-

thesis or non-dissertation studies. Topic is selected jointly by student and instructor. Course format and number of credit hours are determined by the instructor.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 810 - Agronomy Seminar

Credits 1

A discussion of agronomic developments.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring

AGRON 816 - Soil Physics

Credits 3

A study of the transport of water, heat, gases, and solutes in soil. Examples are presented that related to both agricultural and engineering land uses. Emphasis is given to understanding how soil physical properties and soil management practices influence transport processes.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 746 and MATH 220.

Typically Offered

Spring

AGRON 820 - Plant Water Relations

Credits 3

Properties of water, terminology in plant and soil water relations, environmental aspects of plant-water relations, soils as a water reservoir, water as a plant component, water movement through the plant, special aspects of transpiration, development and significance of internal water deficits, drought resistance mechanisms, water consumption by crop plants.

Repeat for Credit

N

Requisites

Recommended Prerequisite: BIOL 500.

Typically Offered

Spring

AGRON 821 - Principles of Forage Quality

Credits 3

The course provides an indepth study of the chemical characteristics of forage components and the interactions with ruminant physiology and digestion that influence forage feeding value and the laboratory procedures used to evaluate forages for grazing livestock. Students should have knowledge of the basic principles of chemistry, ruminant nutrition, and plant physiology so that they can develop an understanding of the chemical characteristics of forages and how they affect the value of forages to grazing livestock.

Note

Web-based distance AG*IDEA course.

Repeat for Credit

N

Requisites

Recommended Prerequisite: AGRON 251 or AGRON 550, and ASI 320, and STAT 225, or equivalents.

Typically Offered

Summer-Even Years

AGRON 822 - Herbicide Interactions

Credits 3

Herbicide fate in plants and soils. Physiological and biochemical processes in plants and soils as affected by herbicides. Molecular biochemistry of herbicide resistance that have developed in the field. Biotechnologically derived herbicide-resistant crops.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 650 or BIOL 500.

Typically Offered

Spring-Odd Years

AGRON 824 - Advanced Weed Ecology

Credits 3

A study of advanced weed ecology topics including weed/crop interference, weed growth and development, herbicide resistance, biological control, spatial and temporal population dynamics, and ecological approaches to weed management.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: AGRON 650.

Typically Offered

Fall-Odd Years

AGRON 825 - Soil and Plant Analysis

Credits 3

Theories and procedures for the chemical analysis of soils and plant materials. Applications of analysis in soil fertility evaluations and in research work are discussed.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: CHM 271.

Typically Offered

Fall-Odd Years

AGRON 832 - Grassland Plant Identification

Credits 2

Study of plants that have ecological and/or agricultural importance in the Great Plains. Emphasis on plant identification, grassland ecosystems, and plant forage value, palatability, and utilization by both domestic livestock and wildlife. Cultural and historical uses of grassland.

Note

Web-based distance AG*IDEA course.

Repeat for Credit

N

Requisites

Recommended Prerequisite: AGRON 251 and BIOL 198 or equivalents.

Typically Offered

Spring

AGRON 835 - Nutrient Sources, Uptake and Cycling

Credits 3

An examination of the behavior of plant nutrients in soils emphasizing nutrient sources, the interaction of nutrient with soils, and the role of plant root as nutrient sinks. Includes processes used in the formulation of chemical fertilizers and the assessment of available nutrients in non-commercial plant nutrient sources.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 375.

Typically Offered

Fall-Odd Years

AGRON 840 - Crop Physiology**Credits 3**

Principles of nitrogen metabolism, mineral nutrition, photosynthesis, growth substances, and hardiness applied to crop production.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOL 500.

Typically Offered

Spring-Odd Years

AGRON 843 - Advanced Forage Management**Credits 3**

Examines the integrated management of forages, livestock, soil, water, pests, and the environment.

Repeat for Credit

N

Typically Offered

Spring-Even Years

AGRON 845 - Reproducible Research and Scientific Computing**Credits 3**

Develop skills to handle large datasets, generate reproducible science, and develop creative data analysis and interpretation skills. Focus will be on understanding programming logic by developing and writing computing codes for common tasks and concepts related to environmental science.

Note

Three hours lecture per week.

Repeat for Credit

N

Typically Offered

Spring

AGRON 850 - Agricultural Climatology**Credits 3**

Climate and climate change interact with agricultural production systems and climate data can be used to improve our understanding of these changes. Climate fundamentals, climate information, and climate data analysis will be reviewed to understand and solve a variety of social, environmental, and agricultural problems.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

AGRON 860 - Applied Plant Breeding**Credits 3**

This course considers in detail the mechanics of an applied plant breeding program for agronomic crops.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 630 or HORT 740, AGRON 680, and STAT 703.

Typically Offered

Spring

AGRON 880 - Plant Molecular Biology**Credits 3**

A study of plant genes and genome organization, plant gene expression and regulation, and functional analysis of plant genes.

Note

Three hrs. lec. a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521, PLPTH 610, or BIOL 541.

Typically Offered

Fall-Even Years

Crosslisted

PLPTH 880

AGRON 881 - Grazing Ecology and Management

Credits 3

This course discusses the ecological principles of domesticated livestock grazing and their application to manage grazing lands. Theoretical and applied models of plant/animal interactions will be presented. Grazing systems and their management of ecosystem services will be presented as balance between production and conservation outcomes.

Repeat for Credit

N

Typically Offered

Fall-Even Years

AGRON 893 - Agricultural Simulation Modeling

Credits 4

Techniques for developing and testing computer simulation models for research, management, and design applications in agriculture.

Note

Three lectures and one three-hour work session per week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 705. Recommended Foundation Course: MATH 211.

Typically Offered

Fall-Even Years

AGRON 898 - Master's Report

Credits 2

Preparation of a written report either of research or of problem work on a topic in the major field.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 899 - Master's Research

Credits 1-18

Research on a problem which may extend throughout the year and furnish data for a master's thesis.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGRON 900 - Micrometeorology

Credits 3

A comprehensive analysis of interactions between living organisms and their physical environment. Emphasis is placed on characterizing the transport of heat, water, and carbon within the soil-plant-atmosphere continuum. Includes discussions on aerodynamic transfer, surface energy balances, evapotranspiration, trace gas fluxes, and basic micrometeorology. The potential impact of climatic change on biosphere productivity will be considered.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 115 and AGRON 746 or BIOL 500.

Typically Offered

Spring-Odd Years

AGRON 902 - International Agronomy Experience for Graduate Students

Credits 0-6

Students will apply knowledge gained in their graduate curriculum focused on international crops, soils, and agronomic systems. Topics vary by offering depending on the agronomic systems studied and locations visited.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: AGRON 360 and AGRON 375.

Typically Offered

Fall, Spring

AGRON 905 - Advanced Soil Chemistry**Credits 3**

Application of physical chemistry to soils; cation and anion equilibria, ion activities, sorption, redox reactions, and other physiochemical phenomena in soils.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: AGRON 605 and CHM 500.

Typically Offered

Fall-Even Years

AGRON 915 - Advanced Plant Genetics**Credits 3**

In-depth treatment of advanced concepts in molecular, quantitative, and cytogenetics of plants.

Note

Three hrs. lec. a week.

Repeat for Credit

N

Requisites

Prerequisite: PLPTH 680/AGRON 680.

Typically Offered

Fall-Odd Years

Crosslisted

PLPTH 915

AGRON 916 - Advanced Soil Physics**Credits 3**

An advanced study of the transport of water, heat and solutes in soil. The theory of unsaturated water flow, coupled heat and water flow, and the convection and dispersion of reactive solutes will be studied in detail. Spatial variability of soil physical properties will be discussed, solute transport will be presented.

Note

Three hours lecture per week.

Repeat for Credit

Y

Requisites

Prerequisite: AGRON 816, MATH 240 and PHYS 113.

Typically Offered

Fall-Odd Years

AGRON 920 - Advanced Topics in Agronomy**Credits 1-3**

Discussion and lectures on important papers and contributions in the field of Agronomy.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of Instructor

Typically Offered

Fall, Spring, Summer

AGRON 925 - Advanced Soil Genesis and Classification**Credits 3**

An advanced study of processes of soil formation and systems of soil classification including soil taxonomy.

Note

Two hours recitation a week.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: AGRON 515.

Typically Offered

Spring-Odd Years

AGRON 945 - Soil Mineralogy**Credits 4**

Theory and application of methods for analyzing minerals in soil environments, including X-ray, electron optical, thin section, and wet chemical techniques.

Note

Two hours recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: AGRON 605.

Typically Offered

Fall-Odd Years

AGRON 950 - Advanced Crop Ecology**Credits 3**

Principles of growth and development of crops in relation to the environment.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: BIOL 500, BIOL 529, STAT 704, and STAT 705.

Typically Offered

Spring-Even Years

AGRON 955 - Soil Microbial Ecology**Credits 3**

Theories and concepts of the ecology and function of microorganisms in the soil environment. Discussions will include factors regulating microbial activity, the flow of energy (carbon), and nitrogen transformations as they relate to plant productivity and environmental quality.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Recommended Foundation Courses: AGRON 645 and BIOCH 521.

Typically Offered

Spring-Even Years

AGRON 970 - Advanced Plant Breeding I**Credits 3**

Application of quantitative genetics in plant breeding, heritability, mating designs, selection techniques and theory, marker assisted selection, population improvement, breeding autopolyploid crops.

Repeat for Credit

N

Requisites

Recommended Prerequisite: AGRON 860.

Typically Offered

Fall-Odd Years

AGRON 980 - Genomic Analysis for Crop Improvement**Credits 3**

Concepts and applications of genomic analysis in crop improvement, including crop evolution, and origin, germplasm conservation and utilization, population structure and genetic distances, genomic-wide association and linkage studies.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: AGRON 860 or ASI 500, PLPTH 612.

Typically Offered

Spring-Even Years

AGRON 999 - PhD Research

Credits 1-18

Research on a problem which may extend throughout the year and furnish data for a doctoral dissertation.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGTEC 111 - Ag Pathway: Agricultural Technology and Mechanical Systems

Credits 3

For completers of the Kansas Career Cluster Pathway in Agriculture, Food, and Natural Resources Career Cluster, Agricultural Technology and Mechanical Systems

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AGTEC 199 - Independent Study in Agricultural Technical Education

Credits 0-6

Student-specific projects or independent guided studies in agricultural technical education or applied studies.

Note

Department Consent Required

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AGTEC 200 - Topics in Agricultural Technical Education

Credits 0.5-6

Topics of special interest. Will be offered upon sufficient demand in selected areas of agriculture that are technical or applied in nature.

Repeat for Credit

Y

Typically Offered

On sufficient demand

AIT 301 - Advanced Technical Mathematics

Credits 3

This course provides an in-depth study of essential mathematical concepts required to address multiple scenarios within engineering technology, with a focus on Plane Trigonometry, introductory Calculus, and Physics principles.

Repeat for Credit

N

Requisites

Prerequisite: Prerequisite: College Algebra (100) or equivalent or higher

Typically Offered

Fall, Spring, Summer

AIT 325 - Applied Mechanics I

Credits 4

Static force equilibrium, free-body force analysis, friction, structural force analysis, centroids and center of gravity, area moment of inertia, concepts of stress and strain. Strength of materials. Axial, torsional, bending and combined stress and strain analysis. Considerations of stress concentration, fatigue, and impact conditions. Applied fluid mechanics, mass conservation and energy conservation equations.

Note

This course will cover statics, strength of materials and

applied fluid mechanics. 3 hours of lecture, 2 hours of lab.

Repeat for Credit

N

Typically Offered

Fall or Spring

AIT 330 - Electric Circuits and Power Technology

Credits 4

DC and AC circuits, series and parallel connections. Electrical properties of Conductors. Ohm's law. Resistive loads and non-linear loads. Power sources. AC power generation and distribution, single phase and 3-phase, active, reactive and apparent powers, motors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AIT 331 - Semiconductor Electronics and Digital Logic

Credits 4

Studies of basic semiconductor theory. Principles, characteristics and applications of semiconductor devices such as various types of diodes, transistors, and thyristors. Small scale integrated circuits. Logic gates. Number system and Boolean algebra.

Repeat for Credit

N

Requisites

Prerequisite: AIT 330 Electric Circuits and Power Technology or instructor permission.

Typically Offered

Fall or Spring

AIT 370 - Technology Project Management

Credits 3

This course covers the following subjects: 1) principles of engineering decision making process, financial aspects of

technology projects, including principal and compound interest calculations, 2) uniform annual cost, rate of return, depreciation, equipment replacement, and competing projects, 3) technology project planning, including aggregate planning and master production schedule, inventory control, material and capacity planning, and shop floor control as well as 4) technical document preparation and reporting.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

AMETH 160 - Introduction to American Ethnic Studies

Credits 3

This course introduces students to the major concepts related to ethnicity and to some of the major American ethnic groups.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AMETH 185 - Race, Film, and American Stories

Credits 3

Introduces students to how race functions in movies, books, and more. It will further examine how movies and books activate and reflect change. Students will analyze artistic expression from one or more American Ethnic traditions, including film and literature, and possibly also music, comics, TV, and other texts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

ENGL 185 and AMETH 185

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

AMETH 300 - Intercultural Competence in Institutions**Credits 3**

Prepares students to understand and appreciate America's race relations and its diverse histories. Emphasis on implementing cultural competency in various social settings.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Historical Perspectives

AMETH 351 - African American Perspectives**Credits 3**

A critical examination of African American experience in the context of U.S. society and institutions. The analysis will consider the interrelationships between and among various African American groups and "mainstream" America, and their corresponding nationalities and regions of origin.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AMETH 352 - American Indian Perspectives**Credits 3**

A critical examination of American Indian experience in the context of U.S. society and institutions. The analysis will consider the interrelationships between and among various American Indians and "mainstream" America, American Indian nations and/or tribes.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AMETH 353 - Latina/o Perspectives**Credits 3**

A critical examination of U.S. Latina/o experience in the context of American society and institutions. The analysis will consider the interrelationships between and among various Latina/o groups, "mainstream" America, and their corresponding nationalities and regions of origins.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AMETH 354 - Asian American Perspectives**Credits 3**

A critical examination of Asian American experience in the context of U.S. society and institutions. The analysis will consider the interrelationships between and among various Asian American groups, "mainstream" America, and their corresponding nationalities and regions of origin.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

K-State 8
Historical Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

AMETH 370 - Politics of Women of Color

Credits 3

Explores the coalitional politics of women of color from its earliest formation as the "Third World Women's Alliance" in the 1960s to its manifestation in present-day movements like "Incite! Women of Color Against Violence."

Repeat for Credit
N

Typically Offered
Spring

K-State 8
Ethical Reasoning and Responsibility
K-State 8 Tag 2
Human Diversity within the U.S.

AMETH 450 - Comparative Ethnic Studies

Credits 3

Provides a comparative framework for understanding both the specificities within and the differences between the situations of racially marginalized groups in the U.S. and beyond.

Repeat for Credit
N

Typically Offered
Spring

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

AMETH 460 - Independent Reading and Research in American Ethnic Studies

Credits 1-3

Guided reading and research on a specific topic of student interest, leading to preparation of a research paper or creative work.

Note
Topic and credit to be arranged. Permission of instructor.

Repeat for Credit
Y

Requisites
Prerequisite: AMETH 160, at least one other American ethnic studies course

Typically Offered
Fall, Spring, Summer

K-State 8
Human Diversity within the U.S.

AMETH 461 - Transformative Thought

Credits 3

Engages a range of advanced theories and critical concepts in American Ethnic Studies, including the intersections of race, ethnicity, gender, class, indigeneity, (dis)ability, citizenship, and sexuality.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Ethical Reasoning and Responsibility
K-State 8 Tag 2
Human Diversity within the U.S.

AMETH 499 - Senior Research Project in American Ethnic Studies

Credits 3

Guided research in American ethnic studies. Students prepare a research paper on a relevant subject of their choice. Each student is responsible for arranging to work with a member of the American ethnic studies faculty.

Repeat for Credit
N

Requisites

Prerequisite: AMETH 160.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

AMETH 501 - Recitation Leadership**Credits 1-3**

Integrative review of concepts in American ethnic studies under faculty supervision. Preparation for leading discussions, workshops and reviews in American ethnic studies. Students attend two lecture sessions per week concurrent with AMETH 160, one additional seminar session focused on planning and preparation for recitations, and are responsible for leading discussions in one or more recitation sections in AMETH 160 per week.

Repeat for Credit

Y

Typically Offered

Fall, Spring

AMETH 556 - Multicultural Psychology**Credits 3**

To introduce and familiarize students with the concept of multicultural.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

PSYCH 556

AMETH 560 - Topics in American Ethnic Studies**Credits 3**

Selected topics of special interest in American Ethnic Studies.

Note

Topic and credit to be arranged if repeating for credit.

Repeat for Credit

Y

Typically Offered

Fall, Spring

AMETH 660 - Independent Reading and Research in American Ethnic Studies**Credits 1-3**

Advanced guided reading and research on a specific topic of student interest, leading to preparation of a research paper or creative work.

Note

Topic and credit to be arranged. Permission of instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Senior or graduate standing

Typically Offered

Fall, Spring, Summer

AMETH 700 - Advanced Topics in American Ethnic Studies**Credits 3**

Provides students the opportunity to investigate topics in American Ethnic Studies that enable greater depth and complexity of understanding of field's methodological approaches and specializations.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AMP 101 - Introduction to Aviation Regulations and Aircraft Drawings**Credits 3**

A review of the role and organizational structure of the Federal Aviation Administration (FAA) as it relates to the certification and continued airworthiness of aircraft and its operation in general, business, and commercial aviation environments. Emphasis on the privileges and limitations of certificated personnel who maintain aircraft systems in the context of the FAA regulations. Includes concepts of weight and balance, logbook entries, and accurate use of graphs and charts. Students demonstrate the ability to read and comprehend information contained in FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material. Students learn how to read, understand, and interpret aircraft drawings commonly found in the aviation maintenance industry.

Repeat for Credit
N

Typically Offered
Fall or Spring

AMP 102 - Aviation Math and Physics

Credits 3

This is a study of basic math and physics as required by aircraft technicians and defined by FAR 147. Use and understand the principles of simple machines, sound, fluid, and heat dynamics, basic aerodynamics, aircraft structures, and theory of flight. Apply, calculate, and solve basic math functions, ratios and proportions, and algebraic equations that are relevant to aviation. Students will also learn the concepts involved in weighing and balancing an aircraft.

Repeat for Credit
N

Typically Offered
Fall or Spring

AMP 103 - Concepts of Aircraft Materials and Tooling Standards

Credits 3

The concepts essential to understanding aircraft material properties and fabrication techniques are taught. Emphasizes knowledge: shop safety, organization and human factors associated with shop practices, basic aircraft

structural materials and hardware familiarization, fluid lines and fittings, hand tool selection and use, and aviation-specific dimensional inspection tools and techniques, aircraft hardware identification and applications, cleaning and corrosion control, aircraft metal selection and applications, and aircraft material inspection fundamentals.

Repeat for Credit
N

Typically Offered
Fall or Spring

AMP 104 - Basic Aircraft Electricity and Ground Operations

Credits 3

A basic concept of DC/AC circuits, with basic laws relating to the following: measuring voltage, current, resistance, continuity and leakage; relationship of voltage, current and resistance in electrical circuits; reading and interpretation of electrical circuit diagrams; electrical devices and inspection and servicing of batteries. Introduction to digital numbering systems and digital logic functions. Also included are the introduction to air transport maintenance procedures, aircraft ground operations, and knowledge of aircraft batteries.

Repeat for Credit
N

Typically Offered
Fall or Spring

AMP 105 - Application of General Aviation Maintenance Concepts

Credits 2

This laboratory course provides hands-on experience with fundamental aviation maintenance tasks aligned with concepts from AMP 101–104. Students will gain practical skills in weighing aircraft, taking critical measurements, performing non-destructive testing, moving and securing aircraft, and executing basic ground operations. Additional training includes aircraft servicing, fueling, ground running, shop safety procedures and processes, flight line safety, and other general aviation-related tasks.

Repeat for Credit

N

Typically Offered

Fall or Spring

ANTH 200 - Introduction to Cultural Anthropology

Credits 3

Introduction to ethnology and ethnography; analysis and comparison of technological, social, and religious characteristics of cultural systems.

Note

Not available for credit to students who have credit in ANTH 204.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 204 - A General Education Introduction to Cultural Anthropology

Credits 3

Introduction to ethnology and ethnography; analysis and comparison of technological, social, and religious characteristics of cultural systems.

Note

Not available for credit to students who have credit in ANTH 200.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 210 - Introduction to Cultural Anthropology, Honors

Credits 3

Introduction to basic ethnology and ethnography; technological, social, and religious characteristics of cultural systems; discussion and independent study.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 220 - Introduction to Linguistic Anthropology

Credits 3

Language as a part of human behavior: its origins, uses and abuses, and ways of defining reality. Basic descriptive and ethnosemantic skills used by anthropologists to learn languages in the field.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

ANTH 260 - Introduction to Archeology

Credits 3

Brief introduction to the field of anthropological archeology. General survey of world prehistory revealing major cultural changes from the development of early foraging societies through the rise of agricultural and complex communities.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 280 - Introduction to Biological Anthropology**Credits 4**

Provides knowledge regarding the scope of Biological Anthropology, and develop an understanding of: 1) evolutionary theory and evolutionary processes, 2) patterns of adaptation to the environment in primates, and 3) human evolution, human adaptation and human variation. Key concepts/perspectives will include: evolution, selection, adaptation genetics, population genetics, as well as variation and variability.

Note

Requires 3 credit hours lecture and 2 hours lab per week.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Historical Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

ANTH 301 - Initiation to Anthropology**Credits 3**

Identify and apply the core elements of the anthropological perspective while learning professional and academic writing and presentation skills.

Repeat for Credit

Y

Requisites

Prerequisite: Declared Anthropology Major/Minor or Instructor permission.

Typically Offered

Fall

K-State 8

Social Sciences

ANTH 305 - Cultures of South Asia**Credits 3**

Provides an interdisciplinary exploration of the disparate cultures and communities of the South Asian region. We will examine thematic issues of colonization, religion, nationalism, modernity, sexuality, gender, globalization and social stratification in their various South Asian contexts.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 200, ANTH 204 or ANTH 210.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 310 - Environmental Anthropology: Living with Change in the Anthropocene**Credits 3**

Explores anthropological and human science approaches to the complex causes and consequences of environmental change, including climate change, mass species extinction, industrial pollution, and deforestation. Students learn about economic, cultural, and political drivers of environmental degradation and discuss solutions for a more sustainable future from the perspective of social and cultural theory.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

K-State 8 Tag 2

Global Issues and Perspectives

ANTH 312 - Museums, Cultures, and Collaborations

Credits 3

Critically examine the cultures and histories of museums and collections in the United States and elsewhere by exploring topics such as: the complexity of representing others; museums, colonization, and power; museum ethics; collaborative museum work with, and by, indigenous communities and curators; the global art and artifact market and growing repatriation movements, etc. Students will get a chance to visit museums, as well as to engage with the ethnography collections housed by the Anthropology program at K-State.

Repeat for Credit

N

Typically Offered

Fall or Spring

ANTH 314 - Introduction to the World's Religions

Credits 3

Survey of religious beliefs, practices, and experiences from around the world. Emphasis is on religious practices and experiences in different cultural contexts.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 315 - Introduction to Medical Anthropology & Global Health

Credits 3

Explores disease, illness, and medical systems from a cross-cultural perspective. Includes the impacts of culture, gender, wealth inequality and other structural conditions on health and well-being.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

K-State 8 Tag 2

Global Issues and Perspectives

ANTH 316 - Engaged Anthropology

Credits 3

Applies anthropology to real-world problems, politics, and advocacy in various fields including business, technology, engineering, health, agriculture, conservation, human rights, and international development. Explores anthropological engagement with various social, political, and environmental movements and organizations. Emphasis on ethics in research and practice.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Social Sciences

K-State 8 Tag 2

Ethical Reasoning and Responsibility

ANTH 318 - Topics in Cultural Anthropology

Credits 3

Exploration of problems in cultural anthropology for both majors and non-majors.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 319 - Food and Culture

Credits 3

An examination of heritage cuisines, nutrition, and diet as a part of daily life, special holidays, and ritual events, as well as how subsistence, taste, and culinary practices have transformed over time and across borders. Anthropological examples from various subcultures will help students consider what the global flow of people, food commodities, and recipes means for our communities, our identities, our palates, and our bodies.

Repeat for Credit

N

Typically Offered

Fall or Spring

ANTH 328 - Topics in Linguistic Anthropology**Credits 3**

Exploration of problems in linguistic anthropology for both majors and non-majors.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 350 - Topics for Educators**Credits 1-4**

Examination of selected topics in archaeology, cultural, or linguistic anthropology designed to address education standards in the social sciences.

Note

Does not apply towards requirements for anthropology major or minor.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 351 - Special Studies in Anthropology**Credits 1-3**

Explores topics in anthropology through guided field trips (study abroad or domestic excursion).

Repeat for Credit

Y

Typically Offered

Other

ANTH 352 - Topics in Cultural Heritage and Museum Studies**Credits 3**

Anthropological exploration of issues related to cultural heritage institutions including museum management, collections care, interpretation, and public engagement.

Repeat for Credit

Y

Typically Offered

On sufficient demand

ANTH 353 - Museum Collections Management**Credits 3**

Overview of the management and care of tangible objects that form the foundation of museums and other cultural heritage institutions. Introduces policies and procedures essential to ethical collecting and care, particularly preventive conservation.

Repeat for Credit

N

Typically Offered

Fall or Spring

ANTH 364 - Archaeological Myths and Mysteries

Credits 3

Introduces evidence-based thinking and the scientific method in archaeology through evaluation of "mysteries" of our human past. Explores social factors affecting interpretation of past cultures. Case studies include who "discovered" the Americas, ancient alien intervention, Atlantis, myth of the mound builders, and more.

Note

Designed for non-Anthropology majors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 365 - Exploring Kansas Archaeology

Credits 3

Exploration of the archaeological record of past Native people of Kansas and the Central Plains and their diverse lifeways.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

ANTH 368 - Topics in Archaeology

Credits 3

Exploration of problems in archaeology for both majors and non-majors.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 380 - Introduction to Human Evolution

Credits 3

Survey of the human fossil record, including an introduction to evolutionary theory and a discussion of the place that humans occupy among the other primates.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

ANTH 383 - Plagues: The Co-Evolutionary History of Humans and Pathogens

Credits 3

The course will explore the proximate (mechanistic/physiological) and ultimate (evolutionary) causes of disease from a biocultural and historical perspective.

Repeat for Credit

N

Typically Offered

Fall-Even Years

K-State 8

Historical Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

ANTH 384 - Fundamentals of Forensic Anthropology

Credits 3

Provide students with basic knowledge of human skeletal anatomy, as well as the principles guiding the recovery and analysis of human remains, and the bioanthropological methods applied in their identification, within a legal context. Will rely on case study examples to familiarize students with the steps and analyses involved in the process of forensic recovery and identification of human remains. The use of case studies will facilitate learning by providing an engaging way to introduce students to Forensic Anthropology.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ANTH 280

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Empirical and Quantitative Reasoning

ANTH 388 - Topics in Physical Anthropology**Credits 3**

Exploration of problems in physical anthropology for both majors and non-majors.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Natural and Physical Sciences

ANTH 399 - Honors Seminar in Anthropology**Credits 1-3**

Readings and discussion of selected topics.

Note

Open to non-majors in the honors program.

Repeat for Credit

N

Typically Offered

Other

ANTH 499 - Honors Project**Credits 3**

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ANTH 501 - Proficiency Development**Credits 0-3**

Integrative review of anthropological concepts and skills under faculty supervision. For single students or groups of students. Not applicable to major field requirements.

Note

For undergraduate credit only. Consent of instructor and superior performance in relevant course.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Social Sciences

ANTH 505 - South Asian Civilizations**Credits 3**

Interdisciplinary survey of the development of civilizations in India, Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, and Afghanistan, including geography, philosophy, social, economic, political institution, and historical movements.

Repeat for Credit

N

Requisites

Prerequisite: 3 hours of Social Science or junior standing.

Typically Offered

Fall-Even Years

Crosslisted

GEOG 505, HIST 505, POLSC 505, SOCIO 505, ECON 505

ANTH 508 - Asian Religions**Credits 3**

Explores the beliefs, rituals, and cultural practices of selected major Asian Religions, such as Hinduism, Buddhism, Jainism, Sikhism, Confucianism, Taoism, and Shinto.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 204 or ANTH 314. Or sophomore standing.

Typically Offered

On sufficient demand

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ANTH 509 - Cultures of Africa**Credits 3**

Family life, subsistence patterns, exchange systems, languages, religions, and development of the peoples of Africa.

Repeat for Credit

N

Typically Offered

Fall, Spring

ANTH 510 - New Religions**Credits 3**

Exploration of religions around the world formed in the past 250 years, their beliefs and practices, how and why they formed, and the lived experience of adherents today

Repeat for Credit

N

Requisites

Prerequisite: ANTH 204 or ANTH 314 or sophomore standing.

Typically Offered

Fall or Spring

ANTH 513 - Immigrant America**Credits 3**

Discussion of post-1965 immigration to the United States with a focus on Asian and Latino newcomers. Immigrant adaptation, economic strategies and the reinterpretation of cultural identity. Implications for American society.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 200, ANTH 204, or ANTH 210.

Typically Offered

Fall, Spring

ANTH 514 - Narrative Medicine**Credits 3**

Narrative medicine is the use of narrative competency in clinical and other healing contexts to enhance patient, family, or community healing and well-being. Use of well-established research and practice in medical anthropology, the broader medical humanities, and cutting-edge clinical scholarship to help students gain narrative competency. Students will learn why narrative and meaning are critical to healing, how to become aware of patient narratives, and how to practice attention to the stories of others. Students will also learn foundational interpretive skills grounded in close reading and discourse analysis.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 204 or ANTH 220 or ANTH 315 or sophomore standing.

Typically Offered
On sufficient demand

ANTH 515 - Creativity and Culture: The Anthropology of Art

Credits 3

Explores creativity, aesthetics, and meaning in various visual art subcultures in the U.S. and around the world. Attention is paid to the intersection of art and contemporary social issues including structural racism.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 204 or ANTH 220 or ANTH 312 or ANTH 314. Or sophomore standing.

Typically Offered
On sufficient demand

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Human Diversity within the U.S.

ANTH 516 - Ethnomusicology

Credits 3

Music, dance, and other performance subcultures from the United States and around the world will be explored in depth. Emphasis is placed on understanding music and dance styles in their cultural context, including how they change in the era of globalization. The class also explores how social identity is expressed through music-making and other performance cultures.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 204 or ANTH 220 or sophomore standing.

Typically Offered
On sufficient demand

K-State 8
Aesthetic Interpretation

ANTH 518 - Topics in Cultural Anthropology

Credits 1-4

Intensive exploration of themes and topics in cultural anthropology.

Repeat for Credit
Y

Requisites
Prerequisite: ANTH 204 or ANTH 220 or sophomore standing.

Typically Offered
On sufficient demand

K-State 8
Social Sciences

ANTH 525 - Language and Culture

Credits 3

Study of language and dialect as aspects of social and ethnic group identities. Emphasis on analysis of conversational style in diverse cultural settings. Research project to be determined according to student interests.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 220 or consent of instructor.

Typically Offered
Fall, Spring

ANTH 528 - Topics in Linguistic Anthropology

Credits 1-4

Intensive exploration of problems in linguistic anthropology for both major and non-majors with adequate background.

Repeat for Credit
Y

Requisites
Prerequisite: ANTH 220.

Typically Offered
On sufficient demand

ANTH 552 - Topics in Cultural Heritage and Museum Studies

Credits 3

Anthropological exploration of issues related to cultural heritage institutions including museum management, collections care, interpretation, and public engagement.

Repeat for Credit
Y

Requisites
Prerequisite: ANTH 204 or ANTH 220 or ANTH 260 or ANTH 312 or ANTH 352, or sophomore standing.

Typically Offered
On sufficient demand

ANTH 560 - Archaeological Fact or Fiction: Applied Critical Thinking

Credits 3

Explores and develops practical critical thinking and research skills using archaeological approaches and case studies. Examines impact of interpretation of the human past on past and present populations.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 260 or equivalent.

Typically Offered
Fall-Even Years

ANTH 561 - Archaeological Field Methods

Credits 1-9

Provides hands-on training in archaeological field methods (i.e., data collection and documentation through archaeological survey and excavation) as part of a research project.

Note
Instructor consent (application required).

Repeat for Credit
Y

Typically Offered
Summer

ANTH 562 - Archaeological Laboratory Methods

Credits 3

Hands-on instruction in and application of professional principles of processing, analyzing, and interpreting artifacts and related archeological materials.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 260 or equivalent.

Typically Offered
Fall

ANTH 563 - Applied Archaeology

Credits 3

Training in professional and ethical practice in cultural resource management and public archaeology.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 260 or its equivalent.

Typically Offered
Spring

ANTH 565 - North American Archaeology

Credits 3

The prehistoric of native cultures of North America explored through the archaeological record from the peopling of the continent, to the spread of agriculture and village life, up to contact period.

Repeat for Credit
N

Requisites

Prerequisite: ANTH 260.

Typically Offered

Spring-Odd Years

ANTH 568 - Topics in Archaeology**Credits 1-4**

Intensive exploration of archaeological problems for both major and non-majors with adequate background.

Repeat for Credit

Y

Requisites

Prerequisite: ANTH 260.

Typically Offered

On sufficient demand

ANTH 588 - Topics in Physical Anthropology**Credits 1-4**

Intensive exploration of problems in physical anthropology for both major and non-majors with adequate background.

Repeat for Credit

Y

Requisites

Prerequisite: ANTH 280 and ANTH 281.

Typically Offered

On sufficient demand

ANTH 602 - Anthropological Theory**Credits 3**

Exploration of the major theoretical approaches in the principal branches of anthropology.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 204 or ANTH 220 or ANTH 260 or sophomore standing.

Typically Offered

On sufficient demand

K-State 8

Historical Perspectives

ANTH 605 - North American Indians**Credits 3**

Description and comparison of native cultures of Canada and the United States; culture contact and change among surviving groups.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 200 or ANTH 210 or ANTH 260.

Typically Offered

Spring

ANTH 606 - South American Indians**Credits 3**

A survey of the nature and variability of the original cultures of Latin America. Analysis of sample cultures, stressing economic, social, political, and religious structures.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 200 or ANTH 210 or ANTH 260.

Typically Offered

On sufficient demand

ANTH 612 - Ethnohistory**Credits 3**

Introduction to ethnohistory as an anthropological research method.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 204 or ANTH 220 or ANTH 260 or sophomore standing.

Typically Offered
On sufficient demand

ANTH 613 - Gender, Power, and International Development

Credits 3

Examination of various models of development and their impact on various roles of woman and men in various cultures. Emphasis upon Africa, Asia, and Latin America. Comparisons of public, service, and economics sectors, including agriculture, marketing, and industry. Examination of policy issues.

Repeat for Credit
N

Requisites
Prerequisite: SOCIO 211 or ANTH 200 or ANTH 210 and 3 additional hours in sociology or cultural anthropology.

Typically Offered
On sufficient demand

ANTH 615 - Race and Culture

Credits 3

The biological meaning of race; the interrelationships of biological and cultural traits in human evolution; processes of racial formation of man; methods of classifying human races; cultural inheritance; the distinction of race, culture, personality, and intelligence; a review of modern racism; race as an evolutionary episode.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 200, ANTH 210 or ANTH 280.

Typically Offered
On sufficient demand

ANTH 616 - Anthropology of the Future: Apocalypse, Prophecy, and Hope

Credits 3

Explores the culturally construction notion of "the future"

by exploring discourses of time, divination, utopia, prophecy, world-endings and world-renewals from various societies around the world.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 204 or ANTH 314 or sophomore standing

Typically Offered
On sufficient demand

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

ANTH 618 - Religion in Culture

Credits 3

The nature of religion in different cultural systems.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 200 or ANTH 210 or SOCIO 211.

Typically Offered
Fall

ANTH 651 - Internship in Applied Anthropology

Credits 3

Supervised field experience of at least three weeks full time or 150 hours part time with an organization or institution in the application of anthropological approaches to problem solving and working in a professional setting. Emphasis is on anthropological skills in relation to the objectives and operations of an institution.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 519 and junior and consent of program coordinator.

Typically Offered
Fall, Spring, Summer

ANTH 652 - Internship in Museology

Credits 3

Practical professional museum experience of at least three weeks full time or 150 hours part time in the processing of collections, conservation, cataloging, archive and library maintenance, and/or planning and preparation of exhibits.

Note
Instructor Permission.

Repeat for Credit
Y

Requisites
Corequisite: Any 3 credits of ANTH.

Typically Offered
Fall, Spring, Summer

ANTH 659 - Independent Reading and Research in Anthropology

Credits 1-3

Guided reading and research on a specific anthropological topic of student interest, leading to preparation of a research paper.

Note
Topic and credit to be arranged.

Repeat for Credit
Y

Requisites
Prerequisite: Three hours of anthropology and consent of instructor.

Typically Offered
Fall, Spring

ANTH 663 - Andean Archaeology

Credits 3

Examines the economic, social, and political development of the region, including the Tawantinsuya (Inca Empire). Covers the adoption of agriculture; the origin of the state;

power; and the role of religion, cosmology, ideology, and art.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 260.

Typically Offered
Spring

ANTH 665 - European Archaeology

Credits 3

Survey of human prehistory in Europe from the earliest Paleolithic hominins to evolve in Europe, expansion of Homo sapiens and associated cultural developments, the spread of agriculture, diversity of Bronze Age adaptations, to the development of Celtic societies. Studies of archaeological and related evidence are investigated to interpret the dynamics of past ways of living.

Repeat for Credit
N

Requisites
Prerequisite: ANTH 260.

Typically Offered
Spring-Even Years

ANTH 680 - Forensic Anthropology

Credits 4

Anthropological survey of the predominantly biological areas of forensic science, their methods and techniques, as they pertain to the application of that science to the purpose of the law. Particular emphasis will be given to perspectives about the science itself, its application to anthropology, and the unique ways in which that science may be used by law.

Repeat for Credit
N

Requisites
Prerequisite: A life science with laboratory requirement in the College of Arts and Sciences or the consent of the instructor.

Typically Offered

Fall-Even Years

ANTH 681 - Primatology**Credits 3**

Survey of the primate order including considerations of evolution, morphology, and behavior. Particular emphasis will be given to developing perspectives about the origin and evolution of hominids in the context of the primate order.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 280 or consent of instructor.

Typically Offered

On sufficient demand

ANTH 682 - Human Growth and Development**Credits 3**

Provides an anthropological examination of the process of growth and development in humans that emphasizes both the biological, evolutionary, and cultural aspects that have shaped them through time. Emphasis is given to the evolution of the life cycle, as well as the social and environmental conditions that affect human growth.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 280 or instructor's permission.

Typically Offered

Fall

ANTH 683 - Osteology**Credits 4**

Detailed study of human skeleton, with special attention to health and demographic conditions in prehistoric cultures and the evaluation of physical characteristics and genetic relationships of prehistoric populations. Laboratory demonstration and exercise in working with skeletal material for analysis of sex, age, stature, and race. Complete metric and nonmetric analysis with consideration

given to paleodemography, paleopathology in situ analysis and excavation, and preservation.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 280 or consent of instructor.

Typically Offered

Spring-Even Years

ANTH 686 - Bioarchaeology**Credits 3**

Explores how archaeologists and bioanthropologists approach the study of death, mortuary practices and skeletal remains, to reconstruct past lives and understand the associated behavior.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 280 or instructor's consent.

Typically Offered

Spring

ANTH 687 - Seminar in Osteology**Credits 2**

Analysis of human and nonhuman skeletal remains including age, sex, stature, race, anomalies, pathologies, trauma, metric and nonmetric traits, cause of death, and time since death. This course allows greater breadth and depth of osteological analysis than either ANTH 694 or ANTH 695, and allows for more concentration on individual methods and techniques and case studies.

Repeat for Credit

Y

Requisites

Prerequisite: ANTH 694 and ANTH 695.

Typically Offered

On sufficient demand

ANTH 688 - Paleoanthropology

Credits 3

Human origins and evolution as indicated by fossil evidence; interpretation of man-apes, Pithecanthropus, Neanderthal, Cro-Magnon, and other major fossil groups within the context of evolutionary theory, primate comparisons, and cultural evolution.

Note

Lecture and Lab.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 200 or ANTH 280 or consent of instructor.

Typically Offered

Spring-Odd Years

ANTH 710 - Writing Cultures: Ethnographic Methods**Credits 3**

An introduction to qualitative field methods and research ethics in cultural anthropology. Students will examine issues of truth, representation, and reflexivity in ethnographic writing.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 204 or ANTH 220 or junior standing.

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

ANTH 715 - Research Methods in Digital Ethnography**Credits 3**

A hands-on exploration of the uses of digital technology for ethnographic research and representation.

Note

Consent of instructor

Repeat for Credit

N

Typically Offered

Spring

ANTH 720 - Field Methods in Linguistics**Credits 3**

Techniques of collecting and analyzing linguistic data in the field. Work with language consultants in class, on languages such as Swahili.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 220

Typically Offered

On sufficient demand

AP 600 - Introduction to Pharmacology for Health Professionals**Credits 3**

Introduction to Pharmacology for Health Professionals is designed to provide an introduction to the principles of pharmacology and how they apply to health professionals.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 198, CHM 110, BIOCH 571, OR ASI 533 OR BIOL 442 OR KIN 360 OR current standing in Veterinary Medicine OR instructor consent.

Typically Offered

Spring

AP 601 - Cardiorespiratory Physiology**Credits 3**

An examination of the structure and function of the respiratory system and the manner in which oxygen passes from the atmosphere to its site of utilization in the

mitochondria. Exercise, disease, and environmental stresses will form the basis for examining the capacity, plasticity, and limitations to respiratory function.

Repeat for Credit

N

Requisites

Prerequisite: 6 hrs in Kinesiology 500 and above.

Typically Offered

Fall

Crosslisted

KIN 601

AP 603 - Cardiovascular Physiology

Credits 3

Study of the structure and function of the cardiovascular system as it pertains to health and disease. Topics include the control of blood pressure, vascular volume, and blood flow during orthostasis, aging and disease.

Repeat for Credit

N

Requisites

Prerequisite: KIN 250 and KIN 335.

Typically Offered

Spring

Crosslisted

KIN 603

AP 641 - Histology for Health Professions

Credits 3

A brief introduction to the microscopic structure of the cells and tissues of a mammalian body. The class format will be a lecture followed by a laboratory session. The lectures will introduce the day's material, which will then be developed through laboratory sessions that include using light microscopy to read and interpret micrographs, drawing, making glass slides.

Note

Intended for Graduate Credit

Repeat for Credit

N

Typically Offered

Summer

AP 711 - Stem Cells and Comparative Biomedicine

Credits 2

Characteristics of major categories of stem cells. Applicable or potential clinical uses, including their utilization in tissue engineering or targeted delivery of therapeutics.

Repeat for Credit

N

Typically Offered

Spring, Summer

AP 737 - Introduction to Cell Physiology

Credits 2

An introduction to cellular physiology. The objective of this course is to introduce students to the principles of cellular physiology and prepare them to apply the knowledge of cellular physiology to other medical disciplines such as Pharmacology.

Note

Intended for Graduate Credit

Repeat for Credit

N

Requisites

Prerequisite: Admission to the One Year Master's program in Anatomy & Physiology or similar background (CHM 350, BIOCH 521)

Typically Offered

Summer

AP 740 - Study Methods and Career Preparation for Health Professional Students

Credits 1

Introduces and examines research-based study methods that are applicable to advanced study in medical

sciences. Challenges students to identify and improve current study habits. Prepares students to prepare an effective application to professional school.

Note

Intended for Graduate Credit

Repeat for Credit

N

Typically Offered

Fall

AP 743 - Systems Physiology

Credits 4

An introduction to human physiology. The physiology of each body system will be introduced and important variations in medically relevant species will be compared.

Note

Intended for Graduate Credit

Repeat for Credit

N

Requisites

Prerequisites:

CHM350 or equivalent

BIOL198 or equivalent

BIOCH521 or BIOL541 or equivalent

OR permission of instructor

Typically Offered

Fall

AP 773 - Bioinstrumentation Laboratory

Credits 1

Practical experience with and evaluation of laboratory and clinical techniques related to electrodes, transducers, computer-based data acquisition and analysis.

Note

Three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: AP 747 or equivalent and concurrent

enrollment in ECE 772.

Typically Offered

Fall-Even Years

AP 788 - Basic and Applied Pharmacokinetics

Credits 3

This course is designed to provide students with fundamental concepts and principles of absorption, distribution, metabolism and elimination of drugs, environmental chemicals, and nanomaterials by the body. The course also covers actual applications of the pharmacokinetic knowledge using case studies of commonly dosed drugs, common environmental contaminants, and nanomaterials.

Repeat for Credit

N

Typically Offered

Fall-even years

AP 790 - Problems in Anatomy and Physiology

Credits 1-18

Introduction of undergraduate and graduate students to research involving various anatomical and physiological systems.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

AP 796 - Topics in Exercise Physiology

Credits 1-4

Intensive study of a selected topic in Exercise Physiology involving either great in-depth study, or application of theory presented in a related course.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 335, KIN 336. Only 6 hours may be counted toward degree.

Typically Offered

Fall, Spring, Summer

Crosslisted

KIN 796

AP 803 - Seminar

Credits 1

Designed primarily for graduate and senior students enrolled for graduate credit in physiology. Each student is required to give a report on some subject related to physiology. The course is intended to stimulate interest in research and evaluation of data.

Note

One hour a week.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of staff.

Typically Offered

Fall, Spring, Summer

AP 805 - Cell Physiology

Credits 3

Functions of the animal body are described with a primary focus at the cellular and molecular level with correlations to clinical topics. Course content builds on knowledge of chemistry, biochemistry, physics and biology. Basic physiological and pathophysiological mechanisms are examined in the context of the cell environment, intermediary metabolism and cell signaling.

Repeat for Credit

N

Requisites

Standing as 1st year DVM student or permission of course instructors

Typically Offered

Fall

AP 806 - Gross Anatomy I

Credits 6

Gross dissection of the dog with comparative aspects of the cat.

Note

Two hours lecture and nine hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: First-year standing in College of Veterinary Medicine or consent of the instructor.

Typically Offered

Fall

AP 807 - Integrated Physiological Systems 1

Credits 5-6

Microstructure and function of the cardiovascular, endocrine, respiratory, and renal systems of domestic animals with emphasis on physiologic control mechanisms, interrelationships of body systems, and criteria for evaluating animal health.

Microanatomy laboratory is restricted to DVM students. Graduate students should enroll in 5 credits unless they have made arrangements with the course instructor.

Repeat for Credit

N

Requisites

Standing as a 1st year veterinary student, graduate student in Anatomy & Physiology, or equivalent

Typically Offered

Fall

AP 808 - Introduction to Veterinary Medicine and Biomedical Research: Concepts and Values

Credits 1

This course is intended to provide first-year students an opportunity to experience the depth of veterinary/biomedical research required to advance the practice of veterinary medicine, and advance the field of medicine in general. The students will examine the challenges of conducting 1) foundational and translation research (genetic/genomic and mechanistic research), 2) foundational and applications to clinical research 3) population and observational research (epidemiology, prospective clinical trials, retrospective studies), 4) pharmacologic research (the impact of pharmacology on the biomedical sciences). The students will examine relevant connections, consider conceptual relationships, and critically evaluate integrative issues germane to both the practice of and the innovative progress of veterinary medicine. Faculty members in the Departments of A&P, DM/P, and CS, will present topical overviews, based on their professional experiences. This will be designed to connect and integrate fundamental principles and relationships between research and clinical application. These presentations provide examples of the fundamental requirements for clinical therapies and also provide examples of how innovative science leads to new therapies for long standing clinical disease. Additionally, students will learn the tools required to search relevant topic to their career paths within the medical literature. Finally, drawing on the multidisciplinary literature presented by faculty, students will explore the challenges in conducting genetic/genomic research, using genomic information, implementing research results to clinical practice, as well as addressing the social, legal, and professional policies that are emerging from new research. Students will be expected to do reading and to complete online worksheets and present their findings/opinions in class. Class time will be devoted to presentations and to discussion of readings and related current events.

Repeat for Credit

N

Typically Offered

Fall

AP 816 - Gross Anatomy II**Credits 5**

Gross dissection of the horse and ruminant with comparative aspects of the pig, laboratory animals, and the chicken.

Note

Three hours lecture and nine hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AP 806.

Typically Offered

Spring

AP 817 - Integrated Physiological Systems 2**Credits 3-4**

Microstructure and function of the reproductive and digestive systems of domestic animals with emphasis on physiologic control mechanisms, interrelationships of body systems, and criteria for evaluating animal health.

Microanatomy laboratory is restricted to DVM students. Graduate students should enroll in 3 credits unless they have made arrangements with the course instructor.

Repeat for Credit

N

Requisites

Graduate student status in Anatomy & Physiology or equivalent

Typically Offered

Spring

AP 822 - Advanced Muscle Physiology**Credits 3**

Course will examine current topics in muscle physiology. Format to include discussion of scientific papers, oral presentations, and debate of controversial topics.

Repeat for Credit

N

Requisites

Prerequisite: KIN 335 or permission of instructor

Typically Offered

Spring

AP 824 - Physiology of Oxygen Transport

Credits 3

This course is designed to promote critical reading of the literature, particularly with respect to the understanding of exercise physiology and cardiorespiratory, vascular and muscle energetics responses. Activities will include presenting papers, debate and discussion regarding all aspects of science and scientific philosophy.

Repeat for Credit

N

Requisites

Prerequisite: KIN 335 or permission of instructor

Typically Offered

Spring

AP 825 - Special Anatomy

Credits 1-18

The gross and/or microscopic study of any system (or systems) of any domestic animal.

Repeat for Credit

Y

Requisites

Prerequisite: AP 700 or AP 710 or equivalent and consent of staff.

Typically Offered

Fall, Spring, Summer

AP 826 - Advanced Cardiovascular Physiology

Credits 3

Discussion and critical examination of cardiovascular control mechanisms, with specific emphasis on regulation of blood pressure during severe challenges such as exercise, heat stress, and upright posture.

Repeat for Credit

N

Requisites

Prerequisite: KIN 335 or permission of instructor

Typically Offered

Fall

AP 828 - Electricity in Biological Systems

Credits 2

This course provides students in the life and/or physical sciences with foundational understanding of electrical concepts that contribute to life processes spanning the molecular, cellular, systems, and ultimately organismal levels. Historical and cultural discussions of bioelectric phenomena introduce essential concepts for further consideration through critical reading of primary literature.

Repeat for Credit

N

Requisites

Prerequisite: AP805, AP807, AP817 or equivalent physiology courses and permission of the instructor

Typically Offered

Spring

AP 830 - Toxins in the Biological System

Credits 2

An advanced toxicology course concerned with the cellular and subcellular effects of various groups of toxins on the intact animal organism.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521, CHM 531 or CHM 550, AP 844 or consent of instructor.

Typically Offered

Fall-Odd Years

AP 831 - Current Topics in Toxicology

Credits 2

An advanced toxicology course providing in-depth examination of toxicological area of current relevance to and/or controversy on mammalian health.

Note

Specific topics will change from semester to semester.

Student in Ph.D. programs may repeat the course.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521 and AP 818.

Typically Offered

Other

AP 832 - Problems in Toxicology

Credits 1-18

Individual investigations into the interactions of chemical compounds with living systems.

Repeat for Credit

Y

Requisites

Prerequisite: AP 871.

Typically Offered

Fall, Spring, Summer

AP 835 - Animal Care and Welfare

Credits 1

This course will describe the veterinarian's role in protecting the health and welfare of animals. Students will be introduced to the major philosophical positions of animal use. The evolution of animal welfare science will be discussed and students will learn how to assess the welfare of companion, laboratory, zoo and food animals. Common causes of reduced animal welfare and ethical dilemmas will be covered.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

VAP 835 Animal Care and Welfare

AP 838 - Anatomy 1

Credits 3

Part 1 of the comparative anatomy sequence (AP 838, AP 842). An introduction to comparative anatomy with a focus on human clinical anatomy.

Repeat for Credit

N

Requisites

Enrollment in the One Year Master's (non-thesis M.S. in Veterinary Biomedical Science) program or permission of instructor.

Typically Offered

Summer

AP 839 - Biomedical Methods Laboratory

Credits 3

An introduction to the theory and practice of advanced biomedical laboratory techniques.

Repeat for Credit

N

Requisites

Acceptance into the Veterinary Biomedical Science M.S. non-thesis track ("One Year Master's Program") or permission of instructor.

Typically Offered

Spring

AP 842 - Anatomy 2

Credits 3

An introduction to comparative human and domestic animal anatomy with a focus on clinical relevance.

Repeat for Credit

N

Typically Offered

Fall

AP 844 - Pharmacology I

Credits 4

The basic principles of pharmacology, the interactions of drugs and living systems including fundamental principles of pharmacokinetics, pharmacodynamics, receptor-

coupling, and mechanisms of action. A systems-based approach to drug classes will be emphasized.

Note

Four hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: AP 804 and AP 818 or equivalent.

Typically Offered

Fall

AP 846 - Pharmacology II

Credits 2

The basic principles of pharmacology, the relationship of drug actions and interactions on physiological principles and pathophysiological conditions. Pharmacokinetics, pharmacodynamics, and a systems-based approach to drug classes will be emphasized.

Repeat for Credit

N

Requisites

Prerequisite: Student must have a "C" or higher in AP 844 and DMP 712.

Typically Offered

Spring

AP 850 - Stem Cell Techniques

Credits 2

Cellular and molecular techniques and techniques on tissue culture. Lecture and laboratory hours to be determined.

Repeat for Credit

Y

Typically Offered

Fall, Summer

AP 855 - Observing and Analyzing Animal Behavior

Credits 1

This course will guide students on how to design, conduct, and analyze animal behavior experiments. The course will emphasize the development of an ethogram and the proper way to score animal behavior, including counts, duration, latencies, and bouts. Students will develop their own ethogram to score and analyze the behaviors of a focal animal and present the data as a written project.

Repeat for Credit

N

Typically Offered

Spring

AP 861 - Ultrastructural Interpretation of the Nervous System

Credits 3

Study of the fine structure of neurons, axons, synapses, neuroglia and choroid plexus, the interconnections among neurons, the location of specific tracers and antibodies which define synaptic terminals, and a survey of methodologies used with transmission electron microscopy.

Repeat for Credit

Y

Requisites

Prerequisite: Biol. 541 or AP 710.

Typically Offered

Spring

AP 870 - Advanced Cardiovascular Physiology

Credits 2

Comprehensive overview of cardiovascular physiology in domestic animals with special emphasis on the dog and horse, including current research.

Repeat for Credit

N

Requisites

Prerequisite: AP 747 or equivalent.

Typically Offered

Fall-Odd Years

AP 871 - Toxicology

Credits 3

Effects of harmful substances on the animal body.
Emphasis placed on toxicologic principles and management of the poisoned patient.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in the College of Veterinary Medicine or Graduate Student in the College of Veterinary Medicine, BIOCH 521, and AP 818.

Typically Offered

Spring

AP 873 - Physiologically Based Pharmacokinetic Modeling**Credits 4**

This modeling course is designed for life science graduate students with an interest in computational toxicology and pharmacology. Development of physiologically based pharmacokinetic (PBPK) models for environmental chemicals, drugs, and nanomaterials in laboratory animals, food-producing animals, companion animals, and/or humans will be introduced. Applications of PBPK models in food safety, toxicology, risk assessment, and pharmaceutical industry will be discussed. This course will cover theory, application software, experimental design, model development, optimization, validation, evaluation, and extrapolation. The expected outcome is that the student will have PBPK modeling knowledge and skills to develop a PBPK model with some mentoring from an experienced PBPK modeler. Format will include both weekly lectures and hands-on computer lab exercises.

Note

Course objectives

- (1) To provide the student with working knowledge of physiologically based pharmacokinetic models and their applications in toxicology
- (2) To provide students with the technical ability to develop PBPK models for use in their graduate research and careers

Course evaluation:

- (1) Grades will be determined from two written tests (20% each), computer lab simulation exercises/assignments (20%), a project presentation which demonstrates the development of a PBPK model and the application of the PBPK model in toxicology (40%).
- (2) All grading will be administered through K-State

online.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor and 1 semester of calculus, physiology, pharmacology, pharmacokinetics, toxicology or biochemistry.

Typically Offered

Spring

AP 874 - Clinical Pharmacokinetics**Credits 3**

An overview of pharmacokinetics with emphasis on practical implications for the clinician, including bioavailability, bioequivalence, residues in food of animal origin, dosage forms and regimens, therapeutic drug monitoring, drug interactions, interspecies difference, and the effect of disease on the pharmacokinetics of drugs. Background in physiology and statistics strongly recommended.

Repeat for Credit

N

Typically Offered

Fall

AP 880 - Mechanisms of Drug Action**Credits 3**

Discussion of pharmacologic mechanisms at the molecular and cellular level, including receptors, second messengers, and pharmacokinetics. Specialized areas of pharmacology such as neuropharmacology and drug design will be discussed. Areas of current research interest will be emphasized.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Fall-Even Years

AP 890 - Problems in Pharmacology

Credits 1-18

Individual investigations of the interactions of pharmaceutical compounds with living systems.

Repeat for Credit

Y

Requisites

Prerequisite: AP 770.

Typically Offered

Fall, Spring, Summer

AP 893 - Introduction to Nanomedicine**Credits 1**

This course is a brief introduction to nanomaterials and nanomedicine with a focus on clinical applications of nanotechnology. The course presents basic principles of nanotechnology; current clinical applications of nanomedicine; future horizons in nanomedicine.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

VAP 893

AP 894 - Comparative Embryology**Credits 1**

An overview of development anatomy as it relates to clinically important developmental defects and/or normal structure and function of common domestic animals.

Repeat for Credit

N

Requisites

Enrollment in the One Year Master's (non-thesis M.S. in Veterinary Biomedical Science) program or permission of instructor.

Typically Offered

Fall

AP 895 - Equine Exercise Physiology**Credits 2**

Comprehensive overview of the physiology of exercise in the horse with comparison to other species. Emphasis will be on cardiovascular, respiratory, and musculoskeletal systems, including current research.

Repeat for Credit

N

Requisites

Prerequisite: AP 747 or equivalent.

Typically Offered

Fall-Even Years

AP 896 - Introduction to Responsible Conduct of Biomedical Research**Credits 2**

This course will focus on providing graduate/professional students an introduction to the regulations, practices, ethical considerations, and professional interactions that define responsible conduct of biomedical research. Investigator responsibilities associated with initiating and establishing a research program, conducting experimental studies, analyzing and reporting data, publishing in peer-reviewed journals, considerations for submitting grant applications, and understanding compliance issues and regulations will be emphasized. Students will learn through reading journal articles and discussion of pertinent topics to identify and consider issues that are germane to the biomedical research environment.

Repeat for Credit

N

Typically Offered

Fall

AP 897 - Problems in Animal Welfare**Credits 1**

This course will expand on the role of veterinarians in the field of animal welfare. Students will be introduced to the major philosophical positions of animal use. The evolution of animal welfare science will be discussed and students will learn how to assess the welfare of companion, laboratory, zoo and food animals. Contemporary issues in animal welfare will also be explored.

Repeat for Credit

N

Requisites

Recommended Prerequisite: VAP835 or AP835

Typically Offered

Spring

AP 898 - Master's Report**Credits 2**

Master's Report

Repeat for Credit

Y

Requisites

Prerequisite: Consent of staff.

Typically Offered

Fall, Spring, Summer

AP 899 - Research**Credits 1-6**

For graduate students in the field of anatomy or physiology working toward the M.S. Degree.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of staff.

Typically Offered

Fall, Spring, Summer

AP 925 - Advanced Physiology**Credits 3-5**

The principles and techniques in the investigation of bioelectrical phenomena in relation to: (a) the physiology of the digestive organs, (b) myophysiology, (c) endocrinology, and (d) neurophysiology. Advanced physiological experiments will be conducted to provide an understanding of the applications of electronic equipment.

Note

recitation and two three-hour labs a week.

Repeat for Credit

Y

Requisites

Prerequisite: AP 747 and consent of staff.

Typically Offered

Fall, Spring, Summer

AP 995 - Problems in Physiology**Credits 1-18**

Special problem-involving techniques utilized in studying the function of various organ systems of the body.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

AP 999 - Research in Physiology**Credits 1-6**

For graduate students working toward the Ph.D. Degree.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of staff. Animal science and industry courses. The M.or Ph.D. program of study shall include supportive course work from several departments including statistics, biochemistry, anatomy and physiology, biology, grain science and others. Graduate level courses offered in the Department of Animal Sciences and Industry are listed below.

Typically Offered

Fall, Spring, Summer

ARAB 101 - Arabic I**Credits 4**

Introduction to the structure of modern Arabic. Essentials of grammar, speaking, reading, and writing.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ARAB 102 - Arabic II**Credits 4**

Continuation of Arabic I.

Repeat for Credit

N

Requisites

Prerequisite: ARAB 101 or equivalent.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ARAB 201 - Arabic III**Credits 5**

Further development of four skills of listening, speaking, reading, and writing; with emphasis on building and applying basic language knowledge in communicative tasks; exercises in oral interactions and interactions involving text.

Repeat for Credit

N

Requisites

Prerequisite: ARAB 102 or equivalent.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ARAB 301 - Arabic IV**Credits 5**

Continuation of Arabic III.

Repeat for Credit

N

Requisites

Prerequisite: ARAB 201 or equivalent.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ARAB 501 - Arabic V**Credits 4**

Further development of language and culture skills.

Repeat for Credit

N

Requisites

Prerequisite: ARAB 282 or equivalent.

Typically Offered

Other

ARAB 502 - Arabic VI**Credits 4**

A continuation of Arabic V, with further development of language and culture skills.

Repeat for Credit

N

Requisites

Prerequisite: ARAB 501 or equivalent.

Typically Offered

Other

ARAB 540 - Special Studies in Arabic

Credits 1-18

Special Studies in Arabic

Note

Consent of the department head and instructor involved.

Repeat for Credit

Y

Typically Offered

Other

ARCH 240 - Science, Technology, and Architecture

Credits 3

An exploration of the interrelationships between architecture and various sciences including the technological applications of selected scientific theories.

Note

Non-majors may take this course for UGE credit, but it will not fulfill UGE requirements for majors. However, it may be taken as a professional support elective (PSE) by architecture students.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ARCH 248 - Fundamentals of Architectural Technology

Credits 3

Instruction in the fundamentals of architectural technology with emphasis on the concepts and principles necessary for developing an integrated approach to building design.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Admission to a professional program in the college.

Typically Offered

Fall, Spring

Crosslisted

IARC 248: Fundamentals of Architectural Technology

ARCH 252 - History of Contemporary Architecture

Credits 3

A critical exploration of key ideas, practices, and works that have shaped the global history of architecture in the 20th and 21st centuries.

Repeat for Credit

N

Requisites

Prerequisite: ENVD 251 or permission of instructor.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ARCH 265 - Basic Problems in Architectural Design

Credits 1-18

Study of specific architectural design problems under the direction of a member of the architecture faculty.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARCH 274 - Digital Architecture I

Credits 1

This course will introduce students to digital management concepts, basic architectural digital representation, 3-dimensional computer modeling, raster, and vector graphics with an emphasis on conceptual development.

Repeat for Credit

N

Requisites

Prerequisites: Second year standing or higher, or permission of the instructor.

Typically Offered

Fall, Spring, Summer

ARCH 290 - Architecture Through the Ages**Credits 3**

An introductory survey of the history of architecture worldwide from its prehistoric beginnings up to the present day.

Note

May not be taken for credit by students enrolled in the College of Architecture, Planning and Design.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ARCH 299 - Appreciation of Architecture**Credits 3**

An analysis of the evolution of architectural styles to determine the relation of architectural expression to the needs of society.

Note

Three hours recitation a week. May not be taken for credit by students enrolled in the architecture, landscape architecture, or interior architecture curricula.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ARCH 302 - Architectural Design Studio I**Credits 5**

Instruction in architectural design focusing on the application of elements and principles of form and space in design. Instruction in the use of techniques for visually representing design ideas.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the architecture program and ENVD 202.

Typically Offered

Fall

ARCH 304 - Architectural Design Studio II**Credits 5**

Instruction in architectural design focusing on the synthesis of basic social, functional, technical, and aesthetic factors in design. Continued instruction in techniques for visually representing design ideas.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 302 and no grade lower than a C in an architectural design studio course.

Typically Offered

Spring

ARCH 325 - Introduction to Architectural Theory

Credits 3

An introduction to the ideas and literature that have driven architectural discourse and informed practice through various eras.

Repeat for Credit

N

Requisites

Prerequisite: Second-year standing or permission of instructor.

Typically Offered

Fall, Spring

ARCH 347 - Structural Systems in Architecture I**Credits 4**

Introduction to structure as a building system. Overview of contemporary structural systems and their components, including wood, timber, steel, concrete, masonry, and hybrid structures. Discussion of building code requirements for structure, general guidelines for building structures, including appropriate application, and methods for schematic estimation of structural member sizing. Basic understanding of how gravity and lateral forces are propagated through a structural frame from load to building foundation.

Note

Three hours lecture, two hours laboratory per week.

This course replaces ARCH 348 and ARCH 449.

Repeat for Credit

N

Requisites

Prerequisites: PHYS 113 or PHYS 115, MATH 100 or higher, ARCH 248, and admission to a professional program in the college.

Typically Offered

Spring

ARCH 348 - Structural Systems in Architecture I**Credits 3**

Introduction to statics; force analysis and the study of forces in equilibrium; principles of statics as applied to the study of simple elemental structures; the origin, the nature, and the action of loads on structural systems. Instruction in the use of statics in the preliminary stages of building design. For ARCH and IAPD students.

Note

Three hours lecture, two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 113 or PHYS 115, MATH 100 or higher.

Typically Offered

Fall

ARCH 373 - Digital Architecture II**Credits 1**

This course will introduce students to methods for digital 3-dimensional visualization, including rendering, animation, compositing and analysis.

Repeat for Credit

N

Requisites

Prerequisite: Second year standing or higher, or permission of the instructor.

Typically Offered

Fall, Spring, Summer

ARCH 374 - Digital Architecture III**Credits 1**

This course will introduce students to parametric and associative modeling methods for conceptual development, the design and representation of building assemblies and systems, and architectural documentation.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 274, ARCH 373, or permission of the instructor.

Typically Offered
Fall, Spring, Summer

ARCH 401 - Accelerated Architectural Design Studio I

Credits 5

An introduction to the principles, processes and vocabularies of architectural design; basic architectural concerns (space/light/form and human factors); and techniques for visually representing design ideas (sketching/diagramming/instrument-aided drawings and model making).

Repeat for Credit
N

Requisites
Prerequisite: Admission to the post-baccalaureate track of the Master of Architecture Program.

Typically Offered
Fall

ARCH 402 - Accelerated Architectural Design Studio II

Credits 5

Further development of the ideas skills and methodologies introduced in ARCH 401, and introduction to wider array of architectural concerns including social, functional, technical, contextual, and professional issues. The course will prepare students to enter the third-year architectural design studios.

Repeat for Credit
N

Requisites
Prerequisite: ARCH 401, and no grade lower than a C in an architectural design studio course.

Typically Offered
Fall

ARCH 403 - Architectural Design Studio III

Credits 5

Relation of structures to their environment; client and community restraint; development of building programs; synthesis of functional, technical, and aesthetic considerations in the design of structures for human use.

Note
Twelve hours studio a week.

Repeat for Credit
N

Requisites
Prerequisite: ARCH 304 or ARCH 402, and no grade lower than a C in an architectural design studio course.

Typically Offered
Fall

ARCH 404 - Architectural Design Studio IV

Credits 5

Relation of structures to their environment; client and community restraint; development of building programs; synthesis of functional, technical, and aesthetic considerations in the design of structures for human use.

Note
Twelve hours studio a week.

Repeat for Credit
N

Requisites
Prerequisite: ARCH 403 and no grade lower than a C in an architectural design studio course.

Typically Offered
Spring

ARCH 413 - Environmental Systems in Architecture I

Credits 4

Instruction in environmental and building control systems of architecture, including bioclimatic and ecological design principles. Emphasis on integrated system design approach, with a focus on passive and natural strategies. Contemporary and developing approaches are explored.

Note
Three hours lecture and one hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 248 or IARC 248 and enrollment in a professional program in the college.

Typically Offered

Fall, Spring

ARCH 433 - Building Construction Systems in Architecture I**Credits 3**

A lecture course that develops an understanding of how materials and systems assembly reinforce and extend the intentions of the designer as well as an understanding of the strategies and techniques for integration and coordination of the building components. For ARCH and IAPD students.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 248 and admission to a professional program in the college.

Typically Offered

Fall, Spring

ARCH 434 - Building Construction Systems in Architecture II**Credits 3**

This course develops a more sophisticated level of understanding of how materials and systems assembly reinforce and extend the intentions of the designer. Students will develop their ability to both analyze and employ building construction techniques and assemblies as a design generator in preparation for Architectural Design Studio V.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 433.

Typically Offered

Spring

ARCH 448 - Structural Systems in Architecture II**Credits 4**

Instruction in the quantitative analysis of structural systems and the forces they resist, proceeding from the design loads associated with building through the reactions of particular structural elements. Overview of material strengths, and other properties of specific structural systems. Instruction in structural system sizing, by hand calculation and computer analysis.

Note

Three hours of lecture, two hours laboratory per week. This course replaces ARCH 452 and ARCH 453.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 347 and admission to a professional program in the college.

Typically Offered

Fall

ARCH 449 - Structural Systems in Architecture II**Credits 3**

Instruction in strength of materials focusing on the behavior of building materials under loading; their ability to resist deformation and failure. Instruction in sizing simple structural elements. For ARCH and IAPD students.

Note

Three hours lecture, two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 348.

Typically Offered

Spring

ARCH 452 - Structural Systems in Architecture III

Credits 3

Instruction in the design of building structures as whole systems. Instruction in the principles of structural subsystem design; emphasis on the overall structural behavior and subsystems integrity required to achieve a variety of building forms. Instruction in strategies for the use of approximation in the manipulation of key quantitative properties of whole systems and major subsystems in building design.

Note

Three hours lecture, two hours workshop/test each week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 449.

Typically Offered

Fall

ARCH 453 - Structural Systems in Architecture IV

Credits 3

Instruction in the design of building structures as whole systems; overall-to-specific systems behavior and manipulative design of major subsystems. Emphasis on the design of subsystems and subsystem components as they are affected by structural material. Instruction in specialized issues associated with the analysis and design of high rise and long-span building structure, including foundation, constructive, and economic factors which affect building design.

Note

Three hours lecture, two hours workshop/test each week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 452.

Typically Offered

Spring

ARCH 475 - Problems in Architectural Presentation

Credits 1-18

Study of various methods of graphically representing architectural problems to develop professional office techniques.

Repeat for Credit

Y

Requisites

Prerequisite: Second-year standing and approval of instructor.

Typically Offered

Fall, Spring, Summer

ARCH 503 - Academic Internship Preparation

Credits 1

Preparation for an academic internship in the field of architecture.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 and ARCH 404.

Typically Offered

Fall, Spring, Summer

ARCH 505 - Academic Internship

Credits 6

Off-campus work study program with an approved professional sponsor.

Note

Must be enrolled concurrently with ARCH 506, and each course must be successfully completed before credit is awarded in either.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 503, approval of the internship coordinator, and no grade lower than a C in an architectural

design studio course.

Typically Offered

Fall, Spring, Summer

ARCH 506 - Academic Internship Seminar

Credits 3

Seminar on practice-based topics in architecture.

Note

Must be enrolled concurrently with ARCH 505, and each course must be successfully completed before credit is awarded in either.

This course is letter-graded only.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 503 and no grade lower than a C in an architectural design studio course.

Typically Offered

Fall, Spring, Summer

ARCH 507 - Architectural Internship, Part C

Credits 2

A continuation of the approved off-campus internship of ARCH 505 and ARCH 506. Preparation of internship journals, employer profiles, and a final internship analysis paper based on the entire 30-week internship experience.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 505 and ARCH 506.

Typically Offered

Summer

ARCH 514 - Environmental Systems in Architecture II

Credits 3

Instruction in criteria for selection and application of natural and mechanical environmental control systems in

architecture. Focus on the integration of thermal, illumination, sanitary, movement, and acoustical systems within the building and the natural environment. Contemporary and developing approaches are explored.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 248 or IARC 248 and enrollment in a professional program in the college.

Typically Offered

Fall, Spring

ARCH 515 - Environmental Systems in Architecture III

Credits 3

Criteria for selection and application of natural and mechanical environmental control systems in architecture. Focus on the integration of thermal, illumination, sanitary, movement, and acoustical systems with the building fabric and the natural environment. Contemporary and developing approaches are explored.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 413.

Typically Offered

Fall

ARCH 565 - Problems in Architectural Design

Credits 1-18

Study of specific design problems under the direct supervision of a member of the architecture faculty.

Repeat for Credit

Y

Requisites

Prerequisite: Approval of instructor.

Typically Offered

Summer

ARCH 605 - Architectural Design Studio V

Credits 5

Design and development of an architectural project beyond schematic design.

Note

Twelve hours studio a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 404, ARCH 434, ARCH 448, ARCH 514, LAR 500 and no grade lower than a C in an architectural design studio course.

Typically Offered

Fall, Spring, Summer

ARCH 606 - Architectural Design Studio VI

Credits 5

Design and development of architectural projects on topics proposed by faculty. On or off-campus studio. Department and College approval required for off-campus studios, whether in a domestic or international studies program or university.

Note

Twelve hours studio a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 404, ARCH 434, ARCH 448, ARCH 514, LAR 500, and no grade lower than a C in an architectural design studio course.

Typically Offered

Fall, Spring, Summer

ARCH 650 - Architectural Programming

Credits 3

An introductory course surveying the basic philosophies and methodologies for architectural programming; emphasis on the comparative evaluation of different strategies and their integration within the process of design.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing or permission of the instructor.

Typically Offered

Fall, Spring

ARCH 654 - Study Abroad Orientation

Credits 0-18

Preparation for participation in study abroad with a focus on specific information pertaining to the design professions and the analysis of the built and natural environment.

Repeat for Credit

N

Typically Offered

Fall, Spring

ARCH 700 - Topics in History of the Designed Environment

Credits 3

Seminar on topics involving specific periods or subjects in the history of the built environment.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 350 or MS ARCH standing.

Typically Offered

Fall, Spring

ARCH 703 - Environmental Aesthetics

Credits 3

Problems involving aesthetics in areas related to student's

major field.

Note

Three hours a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing or permission of instructor.

Typically Offered

Fall, Spring

ARCH 704 - Topics in Environment and Behavior

Credits 3

Seminar on topics in human behavior as it relates to physical environments.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 304 or IAPD 320 or LAR 320 or M. ARCH standing or junior standing if outside CAPD.

Typically Offered

Fall, Spring

ARCH 705 - Project Programming

Credits 2

The development of a program for ARCH 707, Architectural Design VIII under direction of a faculty member.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 606, or ARCH 505/ARCH 506, and approval of the faculty committee.

Typically Offered

Fall, Spring

ARCH 706 - Architectural Design Studio VII

Credits 5

Integration of the physiological, psychological and sociological parameters in the design of environments. Analysis, programming, and planning problems, increased complexity of function and space definition systems. Relating environmental technology to total design.

Note

Twelve hours studio a week.

Repeat for Credit

N

Requisites

Prerequisite: Either ARCH 507 or ARCH 606; ARCH 434, ARCH 448, ARCH 515, and no grade lower than a C in any architectural design studio course.

Typically Offered

Fall, Spring

ARCH 707 - Architectural Design Studio VIII

Credits 5

Development of the student's project programmed in ARCH 705, under the direction of a faculty committee. Project must demonstrate a high level of achievement in systematic and comprehensive thinking, application of resources and communication of total process.

Note

Twelve hours studio a week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 705, ARCH 706, and no grade lower than a C in an architectural design studio course.

Typically Offered

Fall, Spring

ARCH 711 - Topics in Architectural Design Methods

Credits 3

Intensive review of selected design methodologies, including systematic and computer-based approaches to problem definition and project design; emphasis upon the

comparative evaluation of problem-solving strategies within the architectural design process.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 403 or IAPD 435 or LAR 320 or MS ARCH standing.

Typically Offered

Fall, Spring

ARCH 715 - Topics in Architecture Seminar

Credits 3

Seminars that investigate a wide range of topics central to the discipline of architecture.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 403 or permission of instructor.

Typically Offered

Fall, Spring

ARCH 716 - Topics in Environmental Systems in Architecture

Credits 3

A concentrated study of a particular subject related to the environmental systems of the built environment.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 413 or MS ARCH standing.

Typically Offered

Fall, Spring

ARCH 720 - Environment and Behavior

Credits 3

Investigates the relationship between human behavior and design of the physical environment. Includes identification of psychological, social, cultural concepts which influence

and are influenced by the built environment. Emphasizes applying this knowledge in design.

Note

Three hour seminar per week.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 325 or equivalent or permission of instructor.

Typically Offered

Fall, Spring

ARCH 725 - Architecture Research Methods

Credits 3

An introductory course surveying the basic philosophies and methodologies of science and research as they apply to the field of architecture.

Note

Special emphasis will be placed on those methods appropriate for investigating human response to the built environment.

Repeat for Credit

N

Typically Offered

Fall, Spring

ARCH 735 - Topics in Building Construction Systems in Architecture

Credits 1-4

Advanced study of the relationship of conceptual and/or technological factors of building construction to architecture.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 434 or MS ARCH standing.

Typically Offered

Fall, Spring

ARCH 750 - Writing Intensive Architecture Seminar

Credits 3

A writing intensive seminar shall be an Architecture Seminar where over half of the course grade is based on written assignments (including papers, assignments, quizzes and exams).

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200 and ARCH 403.

Typically Offered

Fall, Spring

ARCH 752 - Topics in Structural Systems in Architecture

Credits 3

Study of the relationship of conceptual and/or technological factors of structure to architectural design.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 448 or MS ARCH standing.

Typically Offered

Fall, Spring

ARCH 753 - Foundations of Practice

Credits 3

This course examines the foundational principles of architectural practice in the United States. It equips students with the essential knowledge and understanding of the instruments of service for delivering a building project from concept to realization and positions them to think critically about each step in the process.

Repeat for Credit

N

Typically Offered

Fall

ARCH 765 - Advanced Problems in Architecture

Credits 1-18

Study of specific architectural problems under the direct supervision of a member of the architecture faculty.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARCH 790 - Practicum

Credits 1-18

Practical application of studies related to a student's area of focus.

Note

For Master of Architecture and Master of Science in Architecture students. May be taken with departmental permission only.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARCH 801 - Topics in History of the Designed Environment

Credits 3

Seminar on topics involving specific periods or subjects in the history of the built environment.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 350.

Typically Offered

Fall, Spring

ARCH 803 - Environmental Aesthetics

Credits 3

Problems involving aesthetics in areas related to student's major field.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARCH 804 - Topics in Environment and Behavior**Credits 3**

Seminar on topics in human perceptions, reactions, and behavior as they relate to physical environments.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARCH 805 - Comprehensive Design Preparation**Credits 3**

Scholarly and design-based research, intended to deeply inform architectural decision-making, culminating in a program for an architectural project to be undertaken in ARCH 808.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200, ARCH 605, and ARCH 606.

Typically Offered

Fall

ARCH 809 - Architectural Design Communication**Credits 3**

Instruction in design communication with emphasis on concepts, principles, strategies and skills for effectively combining writing with images and other products of

design; focuses on ideas, processes and proposals developed during the final year of architectural design studio.

Repeat for Credit

N

Requisites

Corequisite: ARCH 818.

Typically Offered

Spring

ARCH 811 - Topics in Architectural Design Methods**Credits 3**

Intensive review of selected design methodologies, including systematic and computer-based approaches to problem definition and project design; emphasis upon the comparative evaluation of problem-solving strategies within the architectural design process. May be repeated for credit with different topics.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 304.

Typically Offered

Fall, Spring

ARCH 815 - Topics in Architecture**Credits 3**

Seminar on topics in architecture with readings, class discussion, student presentations, research papers or projects.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 304.

Typically Offered

Fall, Spring

ARCH 816 - Topics in Environmental Systems in Architecture

Credits 3

A concentrated study of a particular subject related to the environmental systems of the built environment.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 413.

Typically Offered

Fall, Spring

ARCH 817 - Architectural Design Studio VII**Credits 5**

Advanced design and development of architectural projects on topics proposed by faculty.

Note

Twelve hours studio a week.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 605, ARCH 606, and no grade lower than a C in an architectural design course.

Typically Offered

Fall

ARCH 818 - Architectural Design Studio VIII**Credits 5**

Advanced design and development of an architectural project using the program developed in ARCH 805. Students must demonstrate the ability to achieve a comprehensive, integrated design from site- to detail-scale.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 805, ARCH 817, and no grade lower than a C in an architectural design studio course.

Typically Offered

Spring

ARCH 820 - Environment and Behavior**Credits 3**

Investigates the relationship between human behavior and design of the physical environment. Includes identification of psychological, social, cultural factors which influence and are influenced by the built environment. Emphasizes applying this knowledge in design.

Note

Three hour seminar per week.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARCH 830 - Advanced Architectural Studies**Credits 1-18**

Studies related to the area of focus of a M.S. Arch. student in the non-thesis option. Preparation of a non-thesis proposal and a non-thesis project which may include a design project, synthesis paper, portfolio of written work, series of case studies, or other project. May be taken by M. Arch. student with departmental permission only.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARCH 835 - Topics in Building Construction Systems in Architecture**Credits 1-4**

Advanced study of the relationship of conceptual and/or technological factors of building construction to architecture.

Repeat for Credit

Y

Requisites

Prerequisite: ARCH 433.

Typically Offered

Fall, Spring

ARCH 852 - Topics in Structural Systems in Architecture II

Credits 3

Study of the relationship of conceptual and/or technological factors of structure to architectural design.

Repeat for Credit
Y

Requisites
Prerequisite: ARCH 453.

Typically Offered
Fall, Spring

ARCH 853 - Professional Practice: Professional Responsibility

Credits 1

Interdisciplinary course addresses the connections between allied design professions and the larger community. It helps students to understand and appreciate their professional legal and ethical responsibilities.

Repeat for Credit
Y

Typically Offered
Fall, Spring

ARCH 854 - Professional Practice: Office Practices

Credits 1

Interdisciplinary course addresses practice-based issues concerning professional relationships in the design and delivery process, management of projects, communication practices, and fiscal concerns.

Repeat for Credit
N

Typically Offered
Fall, Spring

ARCH 855 - Professional Practice: Discipline-Specific Topics

Credits 1

Covers discipline-specific concerns, focusing on issues specific to architecture, interior architecture and product design, landscape architecture or regional and community planning.

Repeat for Credit
N

Typically Offered
Fall, Spring

ARCH 865 - Advanced Problems in Architectural Design

Credits 0-18

Study of specific architectural design problems under the direct supervision of a member of the architecture faculty.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ARCH 899 - Thesis

Credits 1-18

Study in architecture and related fields leading to thesis.

Repeat for Credit
Y

Typically Offered
Other

ARE 010 - ARE New Student 1st Year Workshop 1

Credits 0

Familiarize entering Architectural Engineering students with the nature of the architectural, engineering, and construction industry with an emphasis on terminology and professionalism. Information related to architectural engineering, department policies, student organizations, department faculty, and career opportunities will be introduced.

Repeat for Credit

N

Typically Offered

Fall

ARE 012 - ARE New Student 1st Year Workshop 2**Credits 0**

Continued familiarization with the architectural, engineering, and construction industry with a stronger emphasis on terminology and professionalism. Additional Information related to architectural engineering, department policies, student organizations, department faculty, and career opportunities will be presented.

Note

One hour recitation per month

Repeat for Credit

N

Typically Offered

Spring

ARE 020 - Architectural Engineering Seminar**Credits 0**

Presentation of professional problems and practices by students, faculty, and professionals associated with the career of architectural engineering.

Note

One hour lecture a month.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARE 100 - Architectural Engineering Orientation**Credits 2**

Introduction to architectural engineering. Promotion of interaction and connection with the department as well as a network of academic and professional networks through the

use of learning communities. Familiarize entering students with the nature of the architectural, engineering, and construction industry with an emphasis on terminology and professionalism.

Note

Two hours lecture a week.

Required for all new students during their first year in the program.

Repeat for Credit

N

Typically Offered

Fall, Spring

ARE 295 - Introduction to Building Systems**Credits 3**

An introduction to building systems including: structural, electrical, mechanical, and plumbing. An emphasis will be made on the importance of these systems to the success of building function and operation. The course will not only expose the students to each system but the criticalness of integration between the systems as well as the architecture and construction of the facility.

Note

3 hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore Standing.

Typically Offered

Fall, Spring

ARE 310 - Introduction to AutoCAD**Credits 1**

An introduction to the basics of AutoCAD.

Note

One hour lecture and three hours lab a week or equivalent.

Repeat for Credit

N

Requisites

Prerequisite: CNS 200, and CNS 321.

Typically Offered

Fall, Spring

ARE 312 - Introduction to Building Information Modeling**Credits 1**

Introduction to building information modeling as a technology tool related to the engineering and construction industry.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: ARE 310.

Typically Offered

Fall, Spring

ARE 421 - Plan Reading & Systems Communications**Credits 3**

The integration of architectural, structural, mechanical, electrical and plumbing building systems, the impact of codes/standards on design, plan reading, and drawing creation.

Note

6 hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 321

Typically Offered

Fall, Spring

ARE 460 - ARE Professional Practice**Credits 3**

General business, management and contractual procedures in professional practice. Personal development of skills needed to enter and be accepted in industry today.

Note

3 hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 295, COMM 106, and ENGL 200. Architectural Engineering majors only.

Typically Offered

On sufficient demand

ARE 497 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARE 499 - Honors Research in Architectural Engineering**Credits 1-18**

Individual research problem selected with approval of faculty advisor. Open to students in the college of engineering honors program. A report is presented orally and in writing during the last semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARE 521 - Computer Aided Architectural Engineering

Credits 2

An introduction to the use of computer software for the design and integration of building systems. The course is intended to complement and enhance the content of the concurrent system courses (Mechanical II, Electrical II, and Structures II). The computer software used will represent the standard practices of the building construction industry.

Note

4 hours lab per week

Repeat for Credit

N

Requisites

Prerequisite: (ARE 551 and ARE 552) or ARE 553.

Typically Offered

Fall, Spring

ARE 537 - Acoustic Systems**Credits 2**

Hearing and the ear, sound generation, acoustical correction, noise reduction, and sound transmission all as integral parts of architectural design.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 113 or PHYS 213.

Typically Offered

Fall, Spring

ARE 551 - Electrical Systems I**Credits 3**

An introduction and study of the basic concepts and components of building electrical distribution systems, including circuit design.

Note

3 hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214 and ARE 295. Architectural Engineering Majors only.

Typically Offered

Fall, Spring

ARE 552 - Mechanical Systems I**Credits 3**

An introduction to building HVAC and plumbing system terminology, principles, and practices of design and layout specifically for applications of human comfort and safety.

Note

3 hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 295, Prerequisite or Concurrent: ME 513. Architectural Engineering Majors only.

Typically Offered

Fall, Spring

ARE 553 - Structural Systems I**Credits 3**

Introduction to design of steel structures. Theoretical and practical bases for proportioning members, their connections, and layout specifically for applications of buildings.

Note

3 hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: CE 533 and prerequisite or concurrent CE 537. Architectural Engineering Majors only.

Typically Offered

Fall, Spring

ARE 561 - Electrical Systems II

Credits 3

The study and application of luminaires, lighting systems design and control, circuit and utilization component design, and design of building electrical systems distribution and service equipment.

Note

3 hours recitation per week

Repeat for Credit

N

Requisites

Prerequisite: ARE 551

Typically Offered

Fall, Spring

ARE 562 - Mechanical Systems II**Credits 3**

The study of building HVAC system selection and application including load calculations, space coordination, system design and layout, and scheduling of equipment and materials.

Note

3 hours recitation per week

Repeat for Credit

N

Requisites

Prerequisite: ARE 552

Typically Offered

Fall, Spring

ARE 563 - Structural Systems II**Credits 3**

Introduction to design of reinforced concrete structures. Theoretical and practical bases for proportioning members, layout specifically for applications of buildings and characteristic as a construction material.

Note

3 hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 553, CHM 210, and CE 537.

Typically Offered

Fall, Spring

ARE 571 - Systems Integration and Design**Credits 3**

An analysis of structural, mechanical, electrical and plumbing systems design processes, budgeting and constructability that supports the Conceptual Design and Schematic Design phases of building projects.

Note

2 hours recitation & 4 hours lab per week.

Repeat for Credit

N

Requisites

Prerequisites: ARE 421, ARE 521, ARE 561, ARE 562, and ARE 563.

Typically Offered

Fall, Spring

ARE 620 - Problems in Architectural Engineering**Credits 1-18**

A study of specific design problems under the direct supervision of a member of the architectural engineering faculty.

Note

Approval of the department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARE 630 - Introduction to LEED**Credits 0-18**

Introduction to green building design and construction

principles and practices based on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System of the United States Green Building Council (USGBC).

Note

One or Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Professional program standing.

Typically Offered

On sufficient demand

ARE 671 - ARE Capstone

Credits 4

In a studio fashion, student working individually or as part of a small team will prepare and present a design project of appropriate scope and complexity with emphasis on structural or mechanical/electrical/plumbing building systems.

Note

2 hours recitation & 6 hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 571

Typically Offered

Fall, Spring

ARE 711 - Building Energy Codes and Standards

Credits 2

Study of the background, importance, impact, and application of the energy codes to the mechanical and electrical systems design process.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 562.

Typically Offered

Spring

ARE 712 - Energy Modeling Lab

Credits 1

Study of current building energy sources and trends, basic engineering economics applied to building energy use, energy calculations for building systems, and software-based whole building energy simulation using eQUEST.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 562.

Typically Offered

Spring

ARE 715 - Problems in Architectural Engineering

Credits 0-18

Participation in student design competition teams under the direct supervision of a member of the architectural engineering faculty.

Note

Approval of the department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ARE 720 - Topics in Architectural Engineering

Credits 1-18

A study of specific design problems in architectural

engineering.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ARE 722 - Building Loads and Computer Aided Structural Analysis and Design

Credits 3

Fundamentals of building structural systems and design with the emphasis on building loads and load paths. Review of International Building Code's structural loading requirements, applications, and determination of design loads by ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures. Introduction of building design and analysis software basics. Students will learn how to generate building structural models, and conduct analysis, design, and simulation using software applications.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: ARE 563.

Typically Offered

Fall

ARE 723 - Timber Structures

Credits 3

Analysis and design of timber structures including dimension lumber, glu-lam members, and engineered wood products.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 537.

Typically Offered

Spring

ARE 724 - Advanced Steel Design

Credits 3

Structural design computations for beams, girders, columns and beam-columns. Design of connections (bolted & welded). Structural working drawings (plan, elevation and connection details). Overview of failure mechanisms and design procedures for plate girders. AISC requirements for prevention of various failure mechanisms.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 553 or CE 542.

Typically Offered

Fall

ARE 725 - Cold-Formed Steel Design

Credits 3

Principles of behavior, design, fabrication, and construction of cold-formed steel structures.

Note

Two or three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 553 or CE 542.

Typically Offered

On sufficient demand

ARE 726 - Masonry Structural Design

Credits 3

Introduction to masonry materials, specifications, testing and construction methods. The design of unreinforced and reinforced masonry structures according to applicable building codes.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 563 or CE 544.

Typically Offered

Fall

ARE 729 - Building Seismic Design**Credits 3**

Continuation of ARE 553 and ARE 563 with special emphasis on seismic design as applied to a complete structure.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ARE 553 or CE 542 and prerequisite or concurrent ARE 563 and ARE 722.

Typically Offered

On sufficient demand

ARE 731 - Advanced Lighting Design**Credits 3**

Design and application of lighting systems for commercial buildings, using current industry practices and computer-assisted analysis.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 561.

Typically Offered

Spring

ARE 733 - Advanced Mechanical Hydronic Systems Design**Credits 3**

Design and application of mechanical systems for buildings, focusing on hydronic and steam systems, expanding on the material and topics presented in prior HVAC courses.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 562.

Typically Offered

Spring

ARE 734 - Advanced Mechanical Air Systems Design**Credits 3**

Design and application of mechanical systems for buildings, focusing on air systems, expanding on the material and topics presented in prior HVAC courses.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 562.

Typically Offered

Fall, Spring

ARE 735 - Advanced Electrical Systems Design**Credits 3**

Design and application of various electrical distribution system for commercial buildings. The course uses the National Electrical Code in conjunction with current industry practices.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 561.

Typically Offered

Fall, Spring

ARE 736 - Advanced Plumbing Design**Credits 3**

Design and application of domestic water and waste systems, storm water systems, fuel gas systems, medical gas systems and fire protections systems.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 552.

Typically Offered

Fall

ARE 741 - Building Communication Systems**Credits 3**

Detailed design and analysis of special electrical systems for buildings including, fire alarm, and communication systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ARE 561.

Typically Offered

Fall

ARE 890 - Problems in Architectural Engineering**Credits 0-18**

A study of a specific problem under the direct supervision of a member of the architectural engineering faculty.

Note

Approval of Major Professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARE 898 - Master's Report**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ARE 899 - Master's Thesis**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 102 - Ceramics for Non-majors**Credits 3**

A foundational survey in ceramic processes covering sculptural and vessel-based making as well as nontraditional practices in ceramic art. Students learn the basic origins of clay, its physical properties, and working characteristics. Surface expression is emphasized through the use of colored slips and glazes and atypical applications.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 103 - Jewelry Design and Processes for Non-majors

Credits 3

Students without a background in art will be introduced to basic forming and construction techniques and design principles for jewelry and small-scale metal objects.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 104 - Digital Photography for Non-majors

Credits 3

Introduction to digital photography including the use of DSLR camera, Adobe Lightroom, and Adobe Photoshop. This course is designed for non-Majors

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 105 - AandD: Career and Creative Industry Seminar

Credits 1

Introduction to art concentrations and professions.

Note

Required of all art majors and must be completed prior to the concentrations admission review procedure.

Repeat for Credit

N

Typically Offered

Fall, Spring

ART 106 - Art Appreciation

Credits 3

Introduction for non-art majors to basic elements (line, color, form, etc.) and principles (balance, repetition, proportion, etc.) of composition and explore some of the purposes (political, spiritual, philosophical, etc.) of art. Explore the relationship of art to historical contexts and examine the concept of style.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

ART 108 - Introduction to Modern and Contemporary Art for Non-Majors

Credits 3

A beginner's guide to understanding and appreciating movements in modern art from Realism, Impressionism, Post-Impressionism, Fauvism, Cubism, De Stijl, Constructivism, Dada, and Surrealism to Abstract Expressionism, Pop Art, Minimalism, and Conceptual Art, as well as art from the postmodern period – Neo-Expressionism, Neo-Abstraction, Neo-Conceptualism, Graffiti Art, etc. – to the present.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2
Historical Perspectives

ART 111 - Photography, Civil Rights, Art and the Environment

Credits 3

Surveys the role(s) photography plays in society focusing on the US civil rights movement and built/natural environment. Examines examples of journalistic and artistic practices in the medium of photography that both look back, question and critique the present with regard to these topics.

Note

Intended for all K-State students in all colleges. Humanities core. No prerequisites.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ART 112 - Professional Practices in the Arts

Credits 3

Focus on business best practices of the creative professions, photography, design, professional practices in museums, auction houses, artist and design studios. Best practices surveyed include conservation, artists contracts, licensing, taxes, art insurance, copyright law, arts management, public art law, artist estates and independent contractor or freelancer health care, as well as grants and grant writing. Career paths and further study in the arts are also explored. This course serves those who want to work in the arts as well as creative professionals or law students who wish to enter arts law.

Note

Intended for all students at K-state or ArtSci, as gen ed. Possibly part of Museum Studies certificate.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ART 174 - A and D: Mixed Media Process and Exploration Lab

Credits 3

A studio-based experience designed for students interested in exploring visual arts and design through practical, experimental methods. Focusing on various techniques, materials, and inter-university collaborations, offering students an opportunity to discover their artistic interests while connecting with the academic and creative community

Repeat for Credit

N

Typically Offered

Fall, Spring

ART 180 - AandD: Color, Light, and Perception Lab

Credits 3

Explore color theory, light phenomena, and visual perception in 'AandD: Color, Light, and Perception Lab.' Develop your creative skills, manipulate light and materials, and analyze visual information. Ideal for all majors seeking enhanced visual literacy and artistic insight.

Note

Six hours lab.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 190 - Drawing I

Credits 3

Fundamental principles of drawing skills based on observation through the introduction of basic materials and techniques.

Note

Six hours lab.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 194 - A and D: Community and the Environment Experience**Credits 3**

A foundational art experience that delves into the crossroads of art, design, and social and environmental matters. Students will harness diverse media to express their views on topics like community identity, cultural diversity, environmental justice, and urban planning. Through collaborative projects, including research and fieldwork, students engage with community partners, making this course relevant for all majors interested in applying visual literacy and artistic sensibility to real-world issues.

Repeat for Credit

N

Typically Offered

Fall or Spring

ART 195 - Survey of Western Art History I**Credits 3**

Historical development of art from pre-history through the Middle Ages.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 196 - Survey of Western Art History II**Credits 3**

Historical development of art from the Renaissance to the nineteenth century.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 197 - Survey of Non-Western Art History**Credits 3**

An introductory survey of the art of Africa, Asia, Oceania, and the Americas from prehistory to the present.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 200 - AandD: Visual Representation and Fabrication**Credits 3**

Explore the foundations of 2D and 3D design in 'AandD: Visual Representation and Fabrication,' developing skills in creating, analyzing, and manipulating visual forms across different media, including drawing, design, and 3D modeling. Fosters visual literacy, creativity, and an understanding of scale, composition, and cultural contexts, making it suitable for students of all majors seeking to enhance their creative sensibility.

Note

Six hours lab.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 202 - Art and Insects**Credits 3**

Provides a framework for examining arts and insects in which students consider evolution, genetics, behavior, and biodiversity, while also learning aesthetic interpretation, analysis of color and shape, perception, and the role of insect representations in the arts and humanities.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

ENTOM 202 - Art and Insects

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Natural and Physical Sciences

ART 205 - Portfolio Review**Credits 1**

The preparation and display of a student's own creative work, upon completion of the Department of Art core. The concentration admission procedure occurs after student selection of an area of concentration within the BFA art major format.

Repeat for Credit

Y

Requisites

Prerequisite or Corequisite: ART 105, ART 194, ART 180, ART 174, ART 200

Typically Offered

Fall, Spring

ART 285 - Visual Communication Design Fundamentals**Credits 3**

An introduction to Visual Communication Design, focusing

on design principles, concept development, and basic tools used in the profession.

Note

Successful completion of Visual Communication Area Portfolio Review - ART 205.required

Repeat for Credit

N

Requisites

Pre-Req: ART 205.

Typically Offered

Fall

ART 290 - Visual Communication Design I: Typography and Design Principles**Credits 3**

Studio design experience introducing the formal and semiotic aspects of typographic systems as applied in design. Students implement the elements and principles of visual language to communicate through typography. Topics include characteristics, classifications, tools, and methods for communicating with typography as content, form, and image. Concepts, skills, process activities, and methods introduced are applicable across all areas of design.

Note

Successful completion of Visual Communication Area Portfolio Review - ART 205.required

Repeat for Credit

N

Requisites

Prerequisite: ART 205

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

ART 291 - Introduction to Drawing**Credits 3**

Fundamental principles of drawing skills based on observation through the introduction of basic materials and

techniques.

Repeat for Credit

N

Typically Offered

Fall, Spring

ART 300 - Special Studies in Art

Credits 1-3

Specialized workshops or seminars conducted in studio, art therapy, art education, or art history.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 301 - Human Form and Composition

Credits 3

Building stylization and expressive image making of the human form with experimental methods: use of color, mono-print, mixed media. A connected and sustained studio time available during intersession only, providing students a working rhythm without interruption from other course work.

Note

Six hours lab.

Repeat for Credit

Y

Requisites

Prerequisite: 180, ART 190.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 303 - Visual Communication Design Techniques I

Credits 3

A hands-on experience intended to introduce non-majors to the visual and critical thinking skills that Visual Communication Designers use when creating print-based communication using text and image.

Repeat for Credit

N

Requisites

Prerequisite: ART 174 OR ART 180 OR ID 225 OR ENVD 201 OR permission of instructor

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 304 - Digital Illustration

Credits 3

Introductory survey of digital drawing and illustration techniques whereby students are introduced to digital illustration software, illustration genres, methods, and materials.

Repeat for Credit

N

Typically Offered

Summer

K-State 8

Aesthetic Interpretation

ART 305 - Introduction to Museum Studies

Credits 3

Fundamentals of museum work including specific museum functions, role of professional personnel, and proper care and handling of art works.

Repeat for Credit

N

Typically Offered

Intersession

ART 310 - Visual Communication Design II: Methods and Processes

Credits 3

Studio design course focused on processes and methodologies applicable to understanding and solving visual communication design problems.

Repeat for Credit

N

Requisites

Prerequisite: ART 290.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 311 - Drawing: Expanded Media

Credits 3

Extension of Introduction of Drawing, observational drawing enhanced by composition, expanded materials and techniques.

Note

Six hours lab.

Repeat for Credit

N

Requisites

Prerequisite: ART 190 or ART 291 or IDSN 225 or ENVD 201

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 313 - Fundamentals of Fiberart and Material Studies.

Credits 3

Introduction to fiberart processes and innovative material as an art form in methods such as small scale tapestry weaving; fabric dye techniques; dye discharge techniques;

fabric pigment applications of painting, stamping, printing; and non-loom basketry coiling or felting.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 315 - Basic 3D Modeling & Printing

Credits 3

Explores the potential and limitation of 3D Printing through a build-intensive design project. Projects use industry standard 3D hardware and software.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 320 - Water Media

Credits 3

Introduction to painting with water-based media through a variety of techniques. Emphasis is placed on learning transparent watercolor.

Note

Six hours studio.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 325 - Figure Drawing

Credits 3

Sustained drawings of the human figure using a variety of media; introduction to human anatomy used by artists.

Note

Six hours lab.

Repeat for Credit

N

Requisites

Prerequisite: ART 190 or ART 291 or IDSN 225 or ENVD 201

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 330 - Digital Techniques in Visual Art

Credits 3

Survey of the most frequently used programs in the studio arts and equipment necessary for successful navigation on the digital arena.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 331 - Introduction to Digital and Expanded Media

Credits 3

Explores digital and expanded media and technology for artistic production including use of computers for graphics, sound, electronics, time-based art practice, installation, and spacial practices, interactive/performance, and programming. Students will apply these skills by relating them to contemporary issues and ideas within the expanded field of artistic production.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 335 - Introduction to Printmaking Techniques

Credits 3

A foundational survey of printmaking techniques for image development and creative expression. Individual and collaborative print based studio work in intaglio (etching), lithography, relief (woodcut), stencil (screen print), digital, or monoprint printmaking processes. Emphasis on exploration and experimentation through the handmade print and the graphic aesthetic.

Note

Six hours lab.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 340 - Introduction to Sculpture

Credits 3

An introduction to sculptural practices and expanded media, such as fundamental techniques and concepts in modeling and construction of three-dimensional forms, woodworking, casting, and installation.

Note

Six hours lab.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 345 - Introduction to Oil Painting

Credits 3

Technical aspects of oil painting materials, including preparation of grounds and use of limited color palettes.

Note

Six hours studio.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 350 - Drawing III**Credits 3**

Continuation of Drawing II, emphasizing exploration in mixed media.

Note

Six hours lab. May be taken for two semesters.

Repeat for Credit

N

Requisites

Prerequisite: ART 325.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 355 - Introduction to 3D Modeling for Jewelry, Ceramics and Design**Credits 3**

Techniques in the design of 3D objects with an emphasis on jewelry and ceramics employing various media.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 360 - Introduction to Wheel Thrown Ceramics**Credits 3**

Introduction to wheel thrown ceramics through use of the pottery wheel. **This course is designed for students majoring in other departments as well as art majors.**

Note

6 hour studio

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 365 - Introduction to the Ceramics Spectrum**Credits 3**

Introduces the spectrum of ceramics processes and techniques including hand building, slip casting, traditional glaze applications, and image transfer techniques.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 370 - Introduction to Metals and Jewelry**Credits 3**

Students will be introduced to basic forming and construction techniques and design processes for jewelry and small-scale metal objects.

Note

Six hours lab.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 380 - Introduction to Sound Art**Credits 3**

Includes digital, electronic, environmental, and acoustic sound in the visual arts context. Sound as component of a studio practice; fundamentals of recording, digital sound editing, electronics, time-based structures, and innovative presentation methods.

Repeat for Credit

N

Typically Offered

Fall or Spring

K-State 8

Aesthetic Interpretation

ART 390 - Design for Digital Media I**Credits 3**

Examines the methods and processes of designing interactive digital interfaces and products. Explores basic html and css, iOS design guidelines, digital typography, usability research, testing, and presentation of findings.

Repeat for Credit

N

Requisites

Prerequisite: ART 290 or permission.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 395 - Introduction to Digital Photography**Credits 3**

Understanding of Photography as an art form. DSLR operation, composition and Photoshop, historical perspectives and contemporary photography as art practice. Cameras can be rented.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 399 - Honors Seminar in Art**Credits 3**

Selected topics in art.

Repeat for Credit

N

Requisites

Prerequisite: For students in the honors program only.

Typically Offered

Other

ART 400 - Visual Communication Design III: Storytelling in Design**Credits 3**

Organize complex systems of text and image material. May address photographic, sequential, or time-based media.

Repeat for Credit

N

Requisites

Prerequisite: ART 290

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ART 404 - Minor in Art - Capstone

Credits 0

Students enroll in this during their final semester as an art minor

Note

Taken in conjunction with the last three credit hours in the 18 hour minor in Art.

Repeat for Credit

Y

Requisites

Prerequisite: 15 credit hours of Art that fulfills the Art minor.

Corequisite: Final 3 credit hours of Art for the Art minor.

Typically Offered

Fall, Spring

ART 405 - A and D: Undergraduate Research Studio**Credits 3**

Delves into contemporary art, exploring it as a form of research and cultivating critical thinking skills. Students will analyze individual artists and art movements in the context of contemporary art theory, all while gaining insights into professional practice and development strategies. Combines readings, lectures, discussions, and hands-on studio sessions, complemented by online resources for staying updated on the latest developments in the field

Repeat for Credit

Y

Requisites

Corequisite: ART 205

Typically Offered

Fall, Spring

ART 407 - Visual Communication Design Topics**Credits 1-3**

Specialized Visual Communication Design course on varying topics.

Repeat for Credit

Y

Requisites

Prerequisites: ART 303 or ART 290 or instructor permission

Typically Offered

Fall, Spring, Summer

ART 410 - BFA Exhibition or Portfolio Presentation**Credits 2**

Course builds an awareness of professional practices and emphasizes the production and exhibition of a final portfolio of the student's art work. Development of evaluative skills involved in the resolution and presentation of a body of individual work.

Note

Students must take their final 3 credits in their concentration during the same semester as ART 410.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ART 415 - Undergraduate Art Studio Assistant in Faculty Research**Credits 1-3**

Students will assist faculty with creative research. Students will gain invaluable firsthand skills and insight of professional art practices. Research activities include but are not limited to production of artwork, preparation of art making materials, exhibition and curatorial research, and professional practice.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 420 - Visual Communication Design IV: Design and Context

Credits 3

Explores issues related to the creation of visual design systems in the media and contexts within which they may be deployed.

Repeat for Credit

N

Requisites

Prerequisite: ART 310 and ART 400.

Typically Offered

Spring

ART 430 - Independent Study-Ceramics**Credits 1-3**

Hands-on experience in studio workflow and project management.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 435 - Independent Study-Crafts**Credits 1-5**

Work in crafts after competency has been achieved. Personal development is emphasized.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ART 440 - Independent Study-Drawing**Credits 1-5**

Work in drawing after competency has been achieved. Personal development is emphasized.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 445 - Independent Study-Graphic Design**Credits 1-5**

Work in graphic design after competency has been achieved. Personal development is emphasized.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 450 - Independent Study-Metalsmithing**Credits 1-5**

Work in metalsmithing and jewelry after competency has been achieved. Personal development is emphasized.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 455 - Independent Study-Painting**Credits 1-5**

Work in painting after competency has been achieved. Personal development is emphasized.

Note

Permission of instructor and painting area head required.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 460 - Independent Study-Printmaking**Credits 1-5**

Work in printmaking after competency has been achieved. Personal development is emphasized.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

ART 470 - Independent Study-Water Color

Credits 1-5

Work in water color after competency has been achieved.
Personal development is emphasized.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ART 475 - Independent Study in Photography

Credits 1-3

Advanced course in photography with an emphasis on
developing personal expression using photographic media,
under the mentorship of the instructor.

Note
Six hours lab.

Repeat for Credit
Y

Requisites
Prerequisite: ART 180 or instructor consent.

Typically Offered
Fall, Spring

ART 480 - Independent Study/Research Computer Art and Design

Credits 1-5

This course is intended to provide students an opportunity
to focus on a specific visual project/problem that will be
solved using computers to focus on as the primary
tool/medium.

Repeat for Credit
Y

Requisites
Prerequisite: ART 400. Corequisite: ART 575.

Typically Offered
Fall, Spring, Summer

K-State 8
Aesthetic Interpretation

ART 503 - Visual Communication Design Techniques II

Credits 3

Develops an intermediate level practical understanding of
the issues that Visual Communication designers face when
they seek to combine words, ideas, and images into a more
meaningful whole. Students will be exploring how the
manipulation of the arrangement of text and image can
effect visual organization, interest, and meaning. Focuses
on visual conception and composition rather than software
application, and is not Intended for students majoring in
Visual Communication Design.

Note
Not Intended for students majoring in Visual
Communication Design.

Repeat for Credit
N

Requisites
Prerequisite: ART 303 or permission of instructor

Typically Offered
Spring, Summer

ART 505 - A and D: Senior Research Studio

Credits 3

An intensive experience preparing Art Majors for diverse
career opportunities post-graduation. Focuses on aligning
personal career goals and artistic strengths with
contemporary society through seminars, studio work, and
on-line resources.

Repeat for Credit
N

Requisites
Prerequisite: ART405

Typically Offered
Fall or Spring

ART 510 - Advanced Techniques in Jewelry and Metal Design

Credits 3

Introduction and exploration of advanced techniques in jewelry and metal design, such as chasing, stone setting, enameling, various metal forming, and direct casting of 3d printed resin models.

Repeat for Credit
N

Requisites
Prerequisite: ART 370 or ART 103.

Typically Offered
Fall, Spring

K-State 8
Aesthetic Interpretation

ART 523 - Digital and Expanded Media Special Topics

Credits 3

Specialized studio art experience exploring technology and experimental media in the context of contemporary fine art production. Topics may include community art practice, systems art, ecology-based art, interactive media, code-based art and locative media.

Repeat for Credit
Y

Requisites
Prerequisite: ART 331 or permission of instructor.

Typically Offered
Fall, Spring

ART 529 - Color Printmaking Workshop: Creative Process and Investigation

Credits 3

Individual and collaborative studio work in intaglio (etching), lithography, relief printing (woodcut), screen printing, digital, or monoprint printmaking processes. Emphasis on multi-color intermedia print development through creative process and material investigation.

Repeat for Credit
Y

Requisites
Prerequisite: ART 335.

Typically Offered
Fall, Spring

ART 530 - Color Printmaking Workshop: Experimental Techniques and Vision

Credits 3

Individual and collaborative studio work in intaglio (etching), lithography, relief printing (woodcut), screen printing, digital, or monoprint printmaking processes. Emphasis on multi-color intermedia print development through experimental techniques and artistic vision.

Repeat for Credit
Y

Requisites
Prerequisite: ART 335.

Typically Offered
Fall, Spring

ART 531 - Ceramic Sculpture Studio

Credits 3

Sculptural ideas and methods in ceramics are explored through a variety of hand-building techniques. This course is designed for students majoring in other departments as well as art majors.

Note
Six-hour studio

Repeat for Credit
Y

Requisites
Prerequisite: ART 365

Typically Offered
Spring

ART 545 - Twentieth Century Art History I: Post-Impressionism to Cubism

Credits 3

Origins and development of twentieth century western art from 1880 to 1914.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Historical Perspectives

ART 550 - Twentieth Century Art History II: Dada to Surrealism

Credits 3

Origins and development of twentieth century western art from 1914 to 1950.

Repeat for Credit
N

Typically Offered
Spring

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Historical Perspectives

ART 560 - Advanced Independent Study

Credits 1-3

Designed for advanced-level art students seeking to explore and develop their artistic skills in a self-guided manner. With instructor permission students will have the flexibility to choose their preferred medium, materials, making it a highly personalized learning experience reserved for students who have demonstrated consistent and substantial motivation in independent, student-lead research.

Note
Instructor permission

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ART 561 - Painting Theme and Variation

Credits 3

Painting, with emphasis on subject and concept as the catalyst for development. Painting's dialogue will be explored through variations on theme, content, and subject in both historical and contemporary contexts.

Note
Six hour studio

Repeat for Credit
Y

Requisites
Junior or Senior standing preferred

Typically Offered
Fall

ART 563 - Topics in Digital Photography

Credits 3

An intermediate level exploration of digital photography, students continue to develop their understanding of DSLR camera and software-based techniques to produce artwork. Students work on practical projects using digital imaging technologies such as DSLR capture, scanning, and professional inkjet printing, and research the use of such technologies by contemporary artists.

Note
Required Hardware: Laptop computer (not tablet) capable of running the current desktop version of Adobe CC Creative Cloud Software; Required Software: Adobe Creative Cloud subscription. Cameras can be rented from the Art Department.

Repeat for Credit
Y

Requisites
Prerequisite: ART 395 or permission of instructor

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ART 565 - Wheel Thrown Ceramics Studio

Credits 3

Elements of intermediate functional ceramics and object design are explored with the pottery wheel, and intended for students majoring in other departments as well as art majors.

Repeat for Credit

Y

Requisites

Prerequisite: ART 365 or ART 102

Typically Offered

Fall

ART 568 - Topics in Analog Photography

Credits 3

An intermediate level exploration of photography, students continue to develop their analog photographic processes such as film developing, darkroom printing, and several historic photographic processes. Students work on practical projects using medium and large format film cameras, professional studio lighting equipment, and research the use of such technologies and processes by contemporary artists.

Note

Required Hardware: Laptop computer (not tablet) capable of running the current desktop version of Adobe CC Creative Cloud Software; Required Software: Adobe Creative Cloud subscription. Cameras can be rented from the Art Department.

Repeat for Credit

Y

Requisites

Prerequisite: ART 395 or permission of instructor

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 570 - Painting Materials Application

Credits 3

Painting's dialogue will be explored through conventional and experimental materials and process in both historical and contemporary contexts. Emphasis on materials and process as synergists for subject, representation and content.

Note

Six hours studio.

Repeat for Credit

Y

Requisites

Prerequisite: Junior or Senior standing preferred

Typically Offered

Spring

ART 572 - Drawing Methods-Contemporary Approaches

Credits 3

Contemporary approaches to drawing.

Repeat for Credit

N

Requisites

Requisites ART 311 or ART 325

Typically Offered

Fall

ART 575 - Web Art

Credits 3

Introduction to interactive web and network-based artistic practice. Topics covered: network art, interactive art, locative media, html, and code-based art. Explores the history of web and network-based art practice.

Repeat for Credit

Y

Typically Offered

Fall, Spring

**ART 576 - Visual Communication Design
Capstone I: Research****Credits 3**

Development of a research trajectory to culminate in the planning and execution of the capstone project in the Spring semester.

Repeat for Credit

N

Requisites

Prerequisite: ART 310, ART 400, ART 420.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

**ART 577 - Matrix Studio and Business
Practices****Credits 3**

Students are selected by portfolio review, design projects are completed to client specifications. Professional design management, ethics, setting up a business, client/designer relationships, contractual options, billing practices, and operating procedures will be covered.

Note

Six hours lab.

Repeat for Credit

Y

Requisites

Prerequisite: ART 400 and must be a major.

Typically Offered

Fall, Spring

**ART 580 - Visual Communication Design
Capstone II: Project****Credits 3**

Conduct research, planning, and execution of a capstone project in visual communication design.

Repeat for Credit

Y

Requisites

Prerequisite: ART 420, ART 576.

Typically Offered

Fall, Spring

ART 582 - Internships in Visual Art & Design**Credits 0-3**

Emphasis on problem solving and related skills in visual art, art history, and graphic design in a professional setting.

Note

Instructor consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

**ART 585 - Visual Communication Design
BFA Portfolio and Professional Practices****Credits 2**

Develops awareness of professional practices and helps prepare the students for professional life after graduation. Requires a final design portfolio and public presentation and/or exhibit.

Note

Must be taken simultaneously with ART 580. Students must take their final 3 credits in their concentration during the same semester as ART 585.

Repeat for Credit

N

Requisites

Prerequisite: ART 576; Corequisite: ART 580

Typically Offered

Spring

ART 590 - Design for Digital Media II

Credits 3

Continues the exploration of designing for dynamic media including developing competencies in the areas of visual narrative, rhythm, space, animation, sound and video.

Repeat for Credit

N

Requisites

Prerequisite: ART 390

Typically Offered

Fall, Spring

ART 599 - Drawing Methods – Thematic Approaches

Credits 3

Developing a thematic body of drawings.

Repeat for Credit

Y

Requisites

Requisites ART 311 or ART 325

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

ART 600 - Drawing Workshop

Credits 3

Research with emphasis on proposing a self-directed drawing project.

Repeat for Credit

Y

Requisites

Prerequisite: ART 311 or ART 325

Typically Offered

Spring

ART 601 - Graphic Design History/Theory/Criticism

Credits 3

Study of significant works from late nineteenth century to the present to provide understanding of the development and character of graphic design, artists, and designers.

Note

Three hours lecture.

Repeat for Credit

N

Typically Offered

Fall, Spring

ART 602 - Twentieth Century Art History III: Abstract Expressionism to Pop Art

Credits 3

Art movements beginning with abstract expressions and continuing through pop, op, minimal, and conceptual art movements up to 1980.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 603 - Twentieth Century Art History IV: Conceptual Art to Contemporary Art

Credits 3

The art movements of the 1980s beginning with photo-realism and continuing through pattern and decoration, new image art, neo-expressionisms, and neo-abstraction.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 604 - Greek Art History**Credits 3**

The art of classical Greece, from its Aegean origins through the Hellenistic period.

Repeat for Credit

N

Requisites

Prerequisite: ART 195 or ART 196.

Typically Offered

Fall, Spring

ART 606 - Visual Art Administration & Leadership**Credits 3**

Surveys facets of management in the visual arts as preparation for work in non-profit museums, galleries or commercial galleries, and working within communities generating projects of impermanence such as performance, social practice and generosity works, pop-up exhibitions, and on-line art projects.

Repeat for Credit

N

Requisites

Prerequisite: Junior or Senior standing preferred.

Typically Offered

Spring, Summer

ART 608 - Special Studies in Art**Credits 3**

Specialized workshops or seminars conducted in studio, art therapy, art education, or art history.

Repeat for Credit

Y

Requisites

Prerequisite: Three credit hours in the relevant area.

Typically Offered

Fall, Spring, Summer

ART 610 - Figure Drawing II**Credits 3**

Continuation of Figure Drawing I, with emphasis on individual expression.

Note

Six hours lab.

Repeat for Credit

Y

Requisites

Prerequisite: ART 325.

Typically Offered

Fall, Spring

ART 612 - History of Italian Renaissance Art**Credits 3**

Renaissance art of Italy from the thirteenth through the sixteenth centuries.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 613 - History of Northern Renaissance Art**Credits 3**

Renaissance Art of Northern Europe from the fourteenth through the sixteenth century.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

**ART 614 - Italian Renaissance Architecture:
Patronage and Construction****Credits 3**

Renaissance architecture of central Italy. A case-study approach with a focus on aesthetics, construction, function, and patronage.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ART 616 - Motion Design**Credits 3**

Specialized training in motion design.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Summer

**ART 621 - Advanced Concepts in Digital
Video****Credits 3**

Introduction to digital video and experimental practices related to moving images and storytelling.

Repeat for Credit

Y

Requisites

Prerequisite: ART 395

Typically Offered

Spring

ART 622 - Baroque Art History**Credits 3**

The development of the baroque period in northern and southern Europe, from its beginnings in the early seventeenth century to the rococo style of the eighteenth century.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

**ART 623 - Advanced Concepts in Digital and
Expanded Media****Credits 3**

Studio exploration of advanced concepts in Digital and Expanded Media artistic practice.

Repeat for Credit

Y

Requisites

Prerequisite: ART 331

Typically Offered

Fall, Spring

ART 626 - Advanced Studies in Photography**Credits 3**

Advanced work in photography with an emphasis on personal development. Focuses on developing well-researched concrete body of work based on prior

experience, and relevant new research in the history, and contemporary practices in art photography.

Note

Students concentrating in Photography should ideally repeat this course two or more number of times.

Repeat for Credit

Y

Requisites

Prerequisite: ART 395, ART 563.

Typically Offered

Fall, Spring

ART 627 - Advanced Study in Photography II

Credits 3

Advanced work in photography with an emphasis on personal development. Focuses on developing well-researched concrete body of work based on prior experience, and relevant new research in the history, and contemporary practices in art photography.

Note

This is one of the two capstone courses that students will take in their senior year.

Repeat for Credit

Y

Requisites

Prerequisite: ART 395, ART 563.

Typically Offered

Fall, Spring

ART 628 - Foreign Studies in Art History

Credits 3-6

Participation in art history study abroad.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ART 629 - Foreign Studies in Visual Communication Design

Credits 3-6

Participation in Visual Communication study abroad.

Repeat for Credit

Y

Requisites

Art department major students after completion of second year in their degree program

Typically Offered

Summer

ART 630 - Foreign Studies in Studio Art

Credits 3-6

Participation in studio art study abroad.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 631 - Contemporary Media Seminar

Credits 3

A review of trends in contemporary media and visual communication.

Note

Studio/lecture.

Repeat for Credit

Y

Requisites

Prerequisite: ART 575.

Typically Offered

Fall, Spring

ART 632 - The Development of American Art**Credits 3**

American art from the Colonial period to the beginnings of abstract expressionism in the early 1940s, with major emphasis on the late nineteenth and early twentieth century developments.

Repeat for Credit

N

Requisites

Prerequisite: ART 195 or ART 196.

Typically Offered

Fall, Spring

ART 634 - History of Modern Sculpture**Credits 3**

Directions in sculpture since the time of Rodin.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

**ART 635 - Advanced Printmaking Workshop:
Illustration and Experimentation****Credits 3**

Advanced level individual and collaborative print based studio work in intaglio (etching), lithography, relief printing (woodcut), screen printing, digital, or monoprint printmaking processes. Emphasis on illustration of ideas and technical experimentation.

Repeat for Credit

Y

Requisites

Prerequisite: ART 335.

Typically Offered

Fall, Spring

**ART 636 - Advanced Printmaking Workshop:
Imagination and Innovation****Credits 3**

Advanced level individual and collaborative print based studio work in intaglio (etching), lithography, relief printing (woodcut), screen printing, digital or monoprint printmaking processes. Emphasis on imagination and technical innovations.

Repeat for Credit

Y

Requisites

Prerequisite: ART 335.

Typically Offered

Fall, Spring

Crosslisted

Fall, Spring

ART 642 - Nineteenth Century Art History**Credits 3**

Painting, sculpture, and architecture of the late eighteenth and nineteenth centuries, with emphasis on the art of France.

Repeat for Credit

N

Requisites

Prerequisite: ART 195 or ART 196.

Typically Offered

Fall, Spring

ART 645 - Sculpture II**Credits 3**

Emphasis on artistic development through exploratory experiences in the various media. Advanced wood working processes, mold making, foundry techniques and welding processes.

Note

Six hour lab.

Repeat for Credit

Y

Requisites

Prerequisite: ART 340.

Typically Offered

Fall, Spring

ART 650 - Painting Topics**Credits 3**

Individualized studio work in varied painting media directed toward identifying and developing a personal vision and mode of expression. Working primarily from the basis of subject, concept, and degree of representation as catalyst for form and material choice, a range of approaches will be explored within both contemporary and historical contexts. Emphasis for graduating seniors will be on producing a cohesive body of work in preparation for the BFA exhibition.

Note

Six hours studio

Repeat for Credit

Y

Requisites

Prerequisite: ART 345

Typically Offered

Fall or Spring

ART 652 - Advanced Painting Topics II**Credits 3**

Continuation of ART 650. Individualized studio work in varied painting media for personal expression. Approaches explored within both contemporary and historical contexts. Seniors will contribute to their cohesive body of work in preparation of BFA exhibition.

Note

6 hours studio.

Repeat for Credit

Y

Requisites

Prerequisite: ART 320, ART 345.

Typically Offered

Spring

ART 653 - Painting Methods**Credits 3**

Individualized studio work in varied painting media directed toward identifying and developing a personal vision and mode of expression. Working from the primary basis of methods, strategies, materials and process, painting's potential for interpretation of subject, representation, and content will be explored within both contemporary and historical contexts. Emphasis for graduating seniors will be on producing a cohesive body of work in preparation for the BFA exhibition.

Note

Six hours studio

Repeat for Credit

Y

Requisites

Prerequisite: ART 345

Typically Offered

Fall or Spring

ART 654 - Women in Art**Credits 3**

The work of women artists from early Middle Ages to the twentieth century, with emphasis on the contemporary period.

Repeat for Credit

N

Requisites

Prerequisite: ART 195 or ART 196.

Typically Offered

Fall, Spring

ART 655 - Advanced Studio in Metals and Jewelry

Credits 3

Explore concepts and processes in contemporary metal art and jewelry field. Develop individual research projects through assignments, individual meetings, presentations, and group critiques. Students in capstone section will focus on creating a unique body of work for BFA show and portfolio.

Note

This course is for senior students. Nine hours lab.

Repeat for Credit

Y

Requisites

Prerequisite: Art 370 or Art 103 or permission of instructor

Typically Offered

Fall, Spring

ART 656 - Art Museum/Gallery Internship**Credits 3**

Practical professional art museum or gallery experience in appropriate institutions of at least 120 hours full-time or 150 hours part-time. May include processing of collections, conservation, cataloging, archive and library maintenance, education and outreach, and/or planning and preparation of exhibits.

Note

Consent of Art Department internship advisor required.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 660 - Advanced Sculpture**Credits 3**

Conduct independent, individually-driven creative work for research, planning, and execution of a capstone project in sculptural practice for BFA Studio Art exhibition.

Note

Instructor permission required for non-majors.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ART 661 - Advanced Painting Methods II**Credits 3**

Individualized studio work in varied painting media directed toward identifying and developing a personal vision and mode of expression. Working from the primary basis of methods, strategies, materials and process, painting's potential for interpretation of subject, representation, an content will be explored within both contemporary and historical contexts. Emphasis for seniors will be on producing a cohesive body of work in preparation of BFA exhibition.

Note

6 hours studio.

Repeat for Credit

Y

Requisites

Prerequisite: ART 320, ART 325, and one semester of ART 653 or ART 650.

Typically Offered

Spring

ART 662 - Southwestern Indian Arts and Culture**Credits 3**

The development of southwestern Indian silversmithing, weaving, pottery, basketry, and painting from the prehistoric period through the twentieth century.

Repeat for Credit

N

Requisites

Prerequisite: ART 195 or ART 196.

Typically Offered

Fall, Spring

ART 665 - Contemporary Ceramics Workshop

Credits 3

Contemporary ceramic practices are explored through concept-based projects using mixed media and ceramic techniques.

Note

Six hours lab.

Repeat for Credit

Y

Requisites

Prerequisite: ART 365 or ART 102

Typically Offered

Spring

ART 667 - Ceramic Design Workshop**Credits 3**

Explores both handmade and digital approaches to prototypes and production for functional ceramics.

Note

Six hours lab.

Repeat for Credit

Y

Requisites

Prerequisite: ART 365 or ART 102

Typically Offered

Fall

ART 675 - History of Ceramics**Credits 3**

History and development of ceramics; study of the use of pottery and other forms of ceramics from earliest known examples to present day.

Repeat for Credit

N

Typically Offered

Fall, Spring

ART 679 - Color Experiments, Theory and Application**Credits 3**

Explores the interaction of color through a variety of exercises, both practical and experimental. Emphasis on visual perception and the relative use of color. Color's potential in illusionist structures and visual communication, color systems.

Repeat for Credit

N

Requisites

Prerequisite: ART 180.

Typically Offered

Intersession

ART 680 - Topics in Contemporary Metals and Jewelry**Credits 3**

Explores concepts and processes in contemporary metal art and jewelry.

Repeat for Credit

Y

Requisites

Prerequisite: ART 370 or ART 103 or permission of instructor

Typically Offered

Fall, Spring

ART 682 - Metals and Jewelry Workshop**Credits 3**

Application of concepts and processes in contemporary metal art and jewelry through individual creative research and making.

Repeat for Credit

Y

Requisites

Prerequisite: Art 370 or Art 103 or permission of instructor

Typically Offered

Spring

ART 685 - Advanced Independent Study Design

Credits 1-18

Advanced work in design-related subjects.

Repeat for Credit

Y

Requisites

Prerequisite: Full sequence of courses related to problem subject matter.

Typically Offered

Fall, Spring, Summer

ART 686 - Advanced Studies in Ceramics Studio

Credits 3

Explores ceramic material processes and characteristics through individual creative research projects. The capstone section is taken in conjunction with the BFA exhibition.

Repeat for Credit

Y

Requisites

Prerequisite: ART 565.

Typically Offered

Fall, Spring

ART 687 - Ceramics Capstone

Credits 3

Creation of a cohesive body of work in ceramics around a selected theme. The capstone section is taken in conjunction with the BFA exhibition.

Repeat for Credit

Y

Requisites

Prerequisite: ART 565.

Typically Offered

Fall, Spring

ART 690 - Techniques in Teaching Art

Credits 1-18

Lectures and class discussion of methods, consideration of suitable laboratory equipment, use of illustrative material, and preparation of courses of study.

Repeat for Credit

N

Requisites

Prerequisite: Twelve hours in art or consent of instructor.

Typically Offered

Fall

ART 692 - Drawing Workshop II

Credits 3

The senior capstone course, dedicated to refining individually determined drawing portfolio.

Repeat for Credit

Y

Requisites

Prerequisite: ART 572 or ART 599.

Typically Offered

Fall, Spring

ART 695 - Topics in Art History

Credits 3

Exploration of selected topics in art history.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 820 - Graduate Graphic Design/Visual Communications

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 822 - Graduate Digital Media

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ART 825 - Professional Practices

Credits 3

Selected topics dealing with career preparation skills such as developing a professional and teaching portfolio, computer techniques for promoting one's art, establishing relationships with galleries/museums, and agencies, basic techniques of exhibition design and installation, techniques of critiquing works of art, etc.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring

ART 826 - Graduate Seminar

Credits 3

Emphasis upon the exchange of ideas and exploration of critical theory. Direct involvement in critiques, readings, discussions, and field trips. Each semester a different theme will guide a pertinent topic from within the field.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ART 830 - Graduate Sculpture Studies

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 835 - Graduate Drawing Studies

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 845 - Graduate Painting Studies

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ART 855 - Graduate Printmaking Studies

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

ART 865 - Graduate Ceramics Studies

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ART 875 - Graduate Metalsmithing and Jewelry Studies

Credits 1-18

Advanced creative work with emphasis on technical and visual research.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ART 885 - Graduate Independent Studies

Credits 1-5

Advanced individual work offered in studio areas of ceramics, graphic design, digital media, drawing, painting, printmaking, sculpture, and metalsmithing and jewelry.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ART 887 - Contemporary Art Theory and Criticism

Credits 3

Discussion of the principal theories influencing production and criticism of contemporary art.

Repeat for Credit
Y

Typically Offered
Fall

ART 888 - Graduate Studies in Photography

Credits 1-10

Focus on the conceptual nature of the photographic medium. Students will be encouraged to produce work useful for their graduate thesis. Course readings will be on photo theory and image relationships.

Note
This course may be taken after or concurrently with Graduate Independent Study.

Repeat for Credit
N

Typically Offered
Fall, Spring

ART 899 - Research in Art

Credits 1-18

Research which may form the basis for the master's of fine art thesis or report.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ASI 100 - Special Topics in Animal Science

Credits 0-6

Seminars of special interest. Will be offered upon sufficient demand in selected areas relating to animal science.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ASI 101 - Foundations in Animal Sciences & Industry

Credits 1

Introduction to the animal sciences & industry programs, activities, resources, faculty and career opportunities.

Note

Required of all freshmen in animal sciences & industry.

One hour seminar a week.

Repeat for Credit

N

Requisites

Prerequisite: Freshman in ASI or PRVAG.

Typically Offered

Fall

ASI 102 - Principles of Animal Science

Credits 3

Basic principles which apply to animal agriculture; survey of the industry; types, purposes, and products of livestock; principles of breeding, selection, nutrition, lactation, reproduction, management, and marketing.

Note

Three hours recitation a week. ASI 105, 106, and 107 are companion courses.

Repeat for Credit

N

Typically Offered

Fall, Spring

ASI 105 - Livestock Lab

Credits 1

An introductory laboratory to expose students to breeding and market types of the primary production livestock species (beef cattle, swine, sheep, and meat goats), including a comparison of the live animal and animal products (meat and wool).

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: ASI 102 or concurrent enrollment.

Typically Offered

Fall, Spring

ASI 106 - Dairy Lab

Credits 0.5

Introduction to the dairy industry.

Note

Two hours of lab a week for eight weeks.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ASI 107 - Companion Animal Lab

Credits 0.5

Introduction to the companion animal industry.

Note

Two hours lab a week for eight weeks.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ASI 108 - Poultry Lab

Credits 0.5

Introduction to the poultry industry.

Note

Two hours lab a week for eight weeks.

Repeat for Credit

N

Typically Offered
Fall, Spring, Summer

ASI 109 - Horse Lab

Credits 0.5

Introduction to the horse industry.

Note
Two hours lab a week for eight weeks.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

ASI 150 - Anatomy and Physiology of Domestic Animals

Credits 3

An overview of anatomy and physiology in domestic animals. Emphasis will be placed on comparative anatomy across species.

Note
Two hours lecture and two hours laboratory per week.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

ASI 202 - Domestic Animal Nutrition

Credits 3

An overview of major nutrients required by domestic animals and their inclusion in common ingredients. Basic feedstuff identification and introductory diet formulation is included.

Note
2 hours lecture and 1 hour recitation per week.

Repeat for Credit
N

Requisites
Prerequisite: MATH 100 or higher or STAT 225 or higher

Typically Offered
Fall, Spring

ASI 210 - Intro to Animal Biotechnology

Credits 3

This course is designed to provide undergraduates in the College of Agriculture hands-on experience in molecular biology and associated problem-solving for applications in agriculture. Students will learn the basics of laboratory book maintenance, pipetting, dilution and concentration calculations, DNA and RNA extraction and amplification, and protein isolation and quantification.

Repeat for Credit
N

Requisites
Prerequisite: Freshman or Sophomore Standing

Typically Offered
Fall

ASI 218 - Fundamentals of Nutrition

Credits 3

Elementary principles of comparative nutrition of farm animals.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: CHM 110 or CHM 210. Recommended prerequisite: BIOL 198.

Typically Offered
Fall, Spring, Summer

K-State 8
Natural and Physical Sciences

ASI 220 - Principles of Feeding

Credits 3

Application of basic nutrition principles to the feeding of

beef cattle, sheep, and swine; feedstuff evaluation; nutrient requirements; ration formulation and practical feeding problems.

Note

Two hours lecture and 2 hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100 and ASI 218.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ASI 261 - Animal Sciences and Industry Problems

Credits 0-6

Independent guided studies in any of the many fields associated with animals and animal products.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 262 - Special Topics in Animal Science

Credits 0-6

Topics of special interest. Will be offered upon sufficient demand in selected areas relating to animal science.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 290 - Computer Applications for Animal Sciences and Industry

Credits 3

Applications of computer techniques and software to the solutions of problems in animal science and related food industries. Includes use of existing software packages for breakeven analysis, animal identification and health records, farm/ranch accounting, and electronic communication.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

ASI 300 - Animal Sciences and Industry Career Preparation

Credits 1

Career exploration and life skill development. Assist students with internship development, interviewing skills, and professional communication formats.

Note

One hour seminar a week.

Repeat for Credit

N

Requisites

Prerequisite ASI major and Sophomore standing.

Typically Offered

Fall, Spring

ASI 301 - Transfer Foundations in ASI

Credits 0

An overview of the Animal Sciences and Industry undergraduate program, including its undergraduate degree requirements, activities, and resources.

Note

One hour lecture per week for four weeks

Repeat for Credit

N

Requisites

prerequisite: ASI major

Typically Offered

Fall, Spring

ASI 302 - Advanced Animal Nutrition**Credits 3**

A study of advanced nutrition concepts for domesticated animals. Emphasis will include determination of nutrient requirements, application of biological and chemical processes to nutrient utilization, and considerations for diet formulation.

Note

3 hours lecture per week

Repeat for Credit

N

Requisites

Prerequisite: ASI 202, CHM 110 or higher, BIOL 101 or higher

Typically Offered

Fall, Spring

ASI 308 - Dairy Foods Processing and Technology**Credits 3**

The fundamental technologies used to process high quality dairy foods using freezing, heat membrane and pressure technologies. Changes in milk chemistry, microbiology and structure will be emphasized during the processing of butter, soft and hard cheeses, concentrated milks, ice cream and yogurt.

Note

Two hours of lecture and one two-hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ASI 310 - Poultry and Poultry Product Evaluation**Credits 2**

Applied knowledge of physical and anatomical characteristics for evaluating poultry for egg and meat production. Evaluation of ready-to-cook poultry products as well as eggs on their exterior, interior, and broken-out appearance according to the latest USDA standards.

Note

Two two-hour labs a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 108.

Typically Offered

Fall

ASI 315 - Livestock and Meat Evaluation**Credits 3**

Evaluation of slaughter livestock and their carcasses as related to economically efficient production of red meat. Evaluation of breeding livestock on visual appraisal and performance records. A study of growth and the effects of nutrition, environment, and hormones on growth patterns. Breeds of livestock and performance programs will be studied.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 105. Recommended Foundation course: ASI 102 or instructor consent.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

ASI 325 - Beginning Horse Evaluation**Credits 2**

Evaluation of conformation and athletic performance of horses. The use of records in selection and the influence of heredity, environment, and training on conformation and performance is addressed.

Note

Students will learn to give an oral justification of their evaluations. Four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

ASI 326 - Advanced Horse Evaluation**Credits 2**

In-depth study of horse conformation and performance horse evaluation. Theories from various equine disciplines are covered with emphasis placed on interpreting horse industry standards, and abilities to communicate those ideals effectively.

Note

One hour lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 325.

Typically Offered

Fall

ASI 333 - Equine Enterprise Management**Credits 1**

Emphasis will be placed on management issues affecting the successful development and operation of an equine facility. Topics covered include health care, diet formulation, equipment needs, facility design and management, and equine business considerations.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in Equine Science Certificate Program (CEQSC) and sophomore standing.

Recommended Prerequisite: ASI 109.

Typically Offered

Fall-Odd Years

ASI 345 - Beginning Horse Training and Management**Credits 2**

Inherited and learned behavior of the horse. Development of methods to communicate with the horse. Emphasis on handling and safety techniques. Opportunities to observe and practice advanced training techniques used in saddling and riding.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in Equine Science Certificate Program (CEQSC).

Typically Offered

Fall

ASI 350 - Meat Science**Credits 3**

An introduction to the red meat industry relating the fundamental properties of muscle structure, chemistry, and physiology to meat quality, composition, processing, nutritional value, and marketing. The laboratory will demonstrate the conversion of animals to meat and by-products, and meat processing technology.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOL 198, or a course in chemistry.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

ASI 361 - Meat Animal Processing**Credits 3**

A student participation course in processing live animals into meat and by-products. Interrelates all phases of modern slaughter and processing techniques, inspection and processing, and related operations.

Note

2 hours lecture and 3 hours lab per week

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

ASI 370 - Principles of Meat Evaluation**Credits 2**

The use of subjective and objective standards to evaluate beef, lamb, and pork carcasses and wholesale cuts for both quality and yield of edible portion as they relate to value and consumer acceptance.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ASI 385 - Wool Grading and Evaluation**Credits 1**

A study of factors determining the commercial grades of wool and the desired fleece qualities of sheep, practice in judging and grading wool.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 102.

Typically Offered

Fall

ASI 390 - Principles of Livestock Selection**Credits 2**

Origin, development, characteristics, and adaptation of different breeds of livestock, with special emphasis on the selection of market and breeding animals.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 315.

Typically Offered

Fall

ASI 395 - Intermediate Horse Training & Management**Credits 2**

Application of training techniques used to start young horses under saddle. Emphasis is placed on developing groundwork skills needed to prepare horses for riding, including longeing, introduction to the saddle and bridle, and driving.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in Equine Science Certificate Program (CEQSC).

Typically Offered

Spring

ASI 396 - Dairy Cattle Judging**Credits 2**

An introduction to the principles of evaluating dairy cattle on the basis of their physical characteristics. Interpretation of the official dairy cow unified score card. Training includes preparation and presentation of oral defense on one's placing of four cow classes.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 102 and ASI 106.

Typically Offered

Spring

ASI 400 - Farm Animal Reproduction**Credits 3**

Basic reproductive anatomy and physiology of cattle, horses, pigs, poultry, and sheep during the first half of the semester provides a solid basis for reproduction management topics which occupy the second half of the course.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 102, BIOL 198 and Sophomore standing.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

ASI 401 - Farm Animal Reproduction Laboratory**Credits 1**

Laboratory exercises with reproductive specimens of farm species. Will include adult male and female reproductive tracts, anatomical changes associated with estrous cycles and anestrus, pregnancy, fetal and placental development, semen characteristics, and ultrasonography.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 400 or concurrent enrollment.

Typically Offered

Spring

ASI 402 - Calving**Credits 1**

Emphasis will be placed on various aspects of managing parturition in cattle. Focus on stages of parturition, dystocia, and calf care.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 102 and junior standing.

Typically Offered

Spring

ASI 403 - Foaling**Credits 1**

Events associated with late gestation, parturition, and the early postpartum period in the horse. Emphasis will be placed on the important aspects of caring for and monitoring a pregnant/lactating mare and her newborn foal.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in Equine Science Certificate Program (CEQSC) and sophomore standing.

Recommended Prerequisite: ASI 102 and ASI 109

Typically Offered

Spring

ASI 404 - Lambing**Credits 1**

Theoretical and practical experience in lambing. Management of the ewe and lambs at parturition, physiology of parturition, and common problems encountered by ewes and lambs during parturition.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 102 and junior standing.

Typically Offered

Spring

ASI 405 - Fundamentals of Milk Processing**Credits 3**

A study of fundamentals of processing, quality assurance, inspection, and marketing of fluid milk and related products in a modern market milk enterprise.

Note

Two hours lecture and one three-hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Historical Perspectives

ASI 420 - Advanced Dairy Cattle Judging**Credits 1**

Advanced Dairy Cattle Judging

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 396.

Typically Offered

Fall

ASI 422 - Livestock Sales Management**Credits 0-1**

Hands-on experience in the planning, promotion, and production of a purebred livestock sale.

Repeat for Credit

Y

Requisites

Recommended prerequisite: Junior standing.

Typically Offered

Fall, Spring

ASI 435 - Advanced Dairy Products Evaluation**Credits 0-1**

Advanced training in the sensory analysis of dairy products, focusing on techniques for detecting and evaluating flavor, body and texture, and appearance. The course covers the scoring system used for dairy product judging and includes participation in collegiate dairy products evaluation contests.

Repeat for Credit

Y

Requisites

Prerequisites: FDSCI 335

Typically Offered

Spring

ASI 444 - Equine Health**Credits 3**

Fundamentals of equine health care and practical experience with the procedures routinely performed by horse owners in the overall management of their horse's well-being. Topics covered include basic anatomy and physiology, recognizing and managing disease conditions and emergency situations, and preventative management strategies and treatment options for a variety of health-related issues.

Note

Two hours lecture and two hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in Equine Science Certificate Program (CEQSC) and sophomore standing.
Recommended Prerequisite: ASI 109.

Typically Offered

Fall

ASI 445 - Advanced Horse Training and Management**Credits 2**

Students will further develop skills acquired in ASI 345. Students will learn how to utilize advanced training practices and applications to enhance the training and performance of horses.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ASI 345.

Typically Offered

Spring

ASI 470 - Form and Function in Livestock**Credits 2**

A detailed study of animal form and type; influence of type related to function; special training in presenting orally the relative merits of beef cattle, sheep, swine, and horses.

Repeat for Credit

N

Requisites

Prerequisite: ASI 390.

Typically Offered

Fall

ASI 495 - Advanced Meat Evaluation**Credits 2**

Advanced study in the evaluation of carcasses, wholesale cuts, and retail cuts of beef, lamb, and pork. Application of grade standards and specifications to beef, lamb, and pork carcasses and subprimal cuts.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 370.

Typically Offered

Fall

ASI 500 - Genetics**Credits 3**

This course builds a foundation in essential genetic principles, starting with Mendelian inheritance and extending to molecular and population genetics.

Note

Three hours lecture a week. Students cannot earn credit for both ASI 500 and ASI 511. The on-campus students enroll in the spring. Online program students enroll in the fall.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198, MATH 100 and Junior Standing.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

ASI 501 - Principles of Animal Breeding**Credits 1**

Introduction to the basic principles of quantitative genetics and their applications to selection and mating in animal populations.

Note

One hour recitation per week. Students cannot earn credit for both ASI 501 and ASI 511. The on-campus students enroll in the fall and online program students enroll in the spring.

Repeat for Credit

N

Requisites

Prerequisite: ASI 500

Typically Offered

Fall, Spring

ASI 504 - Equine Reproduction Management**Credits 3**

Overview of the physiological mechanisms involved in equine reproduction and the scientific reasoning behind breeding management decisions. Recent advances in equine reproductive technology will be highlighted and relevant research will be incorporated into the presentations.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing. Recommended prerequisite: ASI 400.

Typically Offered

Spring

ASI 505 - Equine Reproduction Management Lab**Credits 1**

This course is the laboratory complement to ASI 504. It includes demonstrations and hands-on exercises focused on learning equine breeding techniques. Topics will include mare and stallion handling, estrus detection, semen collection and processing, and artificial insemination.

Note

Four hours lab a week for eight weeks

Repeat for Credit

N

Requisites

Corequisite ASI 504

Typically Offered

Spring

ASI 510 - Animal Breeding Principles**Credits 3**

The genetic principles of evaluation, selection and mating systems used in beef, dairy, sheep, swine, poultry, horse, and companion animal breeding. Intended for ASI majors.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 102 and ASI 500.

Typically Offered

Fall, Spring

ASI 511 - Applied Animal Breeding and Genetics**Credits 4**

A combined animal breeding and genetics course featuring quantitative genetics and how the principles of genetic evaluation, natural and artificial selection, genomics, and mating systems are utilized for genetic improvement in livestock, horse, and companion animal species. This

course also includes an introduction to Mendelian, molecular, and population genetics and their applications in livestock breeding.

Note

Three hours lecture and one hour recitation per week. Students may not earn credit for both ASI 500 + 501 and ASI 511. The on-campus students enroll in the fall. Online program students enroll in the spring.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 198, MATH 100, junior standing

Typically Offered

Fall, Spring

ASI 512 - Bovine Reproductive Technologies

Credits 2

Reproductive technologies used in management of cattle including the physiology of the estrous cycle, embryo viability, and fetal development. Practical training in reproductive management technique.

Note

One hour lecture and five hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 400, senior standing and consent of instructor.

Typically Offered

Fall

ASI 515 - Beef Science

Credits 3

A comprehensive course covering all phases of the beef cattle industry. Practical application of nutrition, breeding, physiology of reproduction, merchandising, risk management and related areas. Special emphasis on management systems of raising, growing and finishing beef cattle.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered

Fall, Spring

ASI 520 - Companion Animal Management

Credits 3

General biology and management of pets in zoos, kennels and at home. Working safely with companion animals. Management of animals in kennels, shelters, research facilities and zoos. Regulatory issues of small animals used as companion pets and in laboratory research. Interactive discussion and written skills will be emphasized.

Note

Three hours of lecture/recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing. Recommended prerequisite: ASI 107.

Typically Offered

Spring

ASI 521 - Horse Science

Credits 3

A study of the horse industry in the U.S., breed profiles, anatomy and evaluation, nutrition, reproduction, growth and development, health, exercise physiology, facilities and equipment, business considerations.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

ASI 524 - Sheep and Meat Goat Science**Credits 3**

Application of scientific management principles to the sheep and meat goat industries. Breeding, reproduction, nutrition, health, management and economic aspects as related to sheep and meat goat production.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

ASI 533 - Physiology of Domestic Animals**Credits 3**

Advanced application of physiology within domesticated animals.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 150, BIOL 198, junior standing

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

ASI 535 - Swine Science**Credits 3**

Application of basic scientific principles to the economical production of pork. Recommendations are made in breeding, reproduction, nutrition, health, housing,

marketing, and management of swine production units of varying sizes.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior or Senior standing.

Typically Offered

Fall, Spring

ASI 540 - Principles of Animal Disease Control**Credits 3**

A study of the factors that influence animal health and disease control for students majoring in agriculture and other fields.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing.

Typically Offered

Spring

ASI 560 - Course-Based Undergraduate Research in Animal Sciences & Industry**Credits 2**

Formal undergraduate research in the area of Animal Sciences & Industry conducted as part of a conventional course. Class consists of 1-hour lecture and two hours of laboratory per week

Repeat for Credit

N

Requisites

Recommend Foundation Course: ASI 102.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

ASI 561 - Undergraduate Research in Animal Sciences & Industry

Credits 0-3

Mentored undergraduate research experience in animal or food sciences.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ASI 595 - Current Issues in Animal Science

Credits 3

This course reviews current issues in the animal science industry, with emphasis on understanding current scientific knowledge and challenges. It is intended to serve as a capstone course for students majoring in animal sciences and industry and should be taken in their last year.

Note

3 hours recitation per week

Repeat for Credit

N

Requisites

Prerequisite: COMM 106 or COMM 130, ENGL 200, ASI 202, ASI 300, and ASI 400

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

ASI 599 - Animal Science Internship

Credits 1-6

Supervised professional experience in an animal science related field. One credit hour per month full-time supervised and evaluated work hours. Internship proposal, evaluation by supervisor, self-assessment, and presentation of internship required.

Note

Permission of supervising faculty member.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 600 - Applied Animal Biotechnology

Credits 3

The objective of this course is to provide insight into the use of large animals in areas of biotechnology. The course will emphasize the use of livestock in food production as well as human medicine applications. A two-hour lecture per week will include topics such as marker assisted selection of livestock, in-vitro fertilization, transgenics, cloning and stem cell technology. A two-hour lab per week will complement material from lectures including PCR, DNA isolation and oocyte collection.

Note

Two-hour lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing and ASI 500 or ASI 511 or BIOL 398.

Recommended prerequisite: BIOCH 521.

Typically Offered

Spring

ASI 601 - Endocrinology and Lactation

Credits 3

Provides an overview of the endocrine systems that regulate mammalian lactation and other related physiological processes. Topics

include structure and function of important endocrine glands and their hormones, receptors, target tissues and physiological mechanisms of action. Emphasis will be placed on whole animal hormonal interactions that regulate nutrient availability for production of milk in dairy cattle and other dairy species. Upon completion of the course students should be able to identify important endocrine organs and hormones and apply their understanding to problems in dairy production.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and junior standing.

Recommended Prerequisite: ASI 400, ASI 533 OR BIOL 340.

Typically Offered

Fall

ASI 602 - Equine Breeding and Genetics**Credits 2**

Application of genetic and animal breeding principles to the horse. Emphasis on inheritance of color and diseases, as well as selection and mating programs.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Recommended prerequisite: ASI 500 and ASI 510.

Typically Offered

Fall-Even Years

ASI 610 - Processed Meat Operations**Credits 2**

A course in processed meats, relating to the science, technology, and quality control of curing, smoking, and sausage manufacturing.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 350

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ASI 620 - Beef Systems Management**Credits 2**

Development of beef enterprise business plans and interacting with beef producers on topics related to cow-calf production, feedlot operations, seedstock operations, animal health, environmental management, and business management.

Note

One hour of lecture twice a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 515

Typically Offered

Spring

ASI 621 - Dairy Cattle Management**Credits 3**

Integration of biologic and economic aspects of dairy production with dairy farm organization, planning, operation and analysis. Field trips, dairy farm analysis and case studies will be used to supplement lec. Material.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered
Fall

ASI 635 - Gamebird Production and Management

Credits 3

Principles and practices of upland game bird production including incubation and hatching, flight pen construction, nutritional management, predation control, disease management and meat processing.

Note
Two hours lecture and 2 hours lab per week.

Repeat for Credit
N

Requisites
Recommended Foundation Course: ASI 108.

Typically Offered
Spring

ASI 640 - Poultry Products Technology

Credits 3

Emphasis on the technical problems that exist between production and consumption during the processing and marketing of poultry meat and egg products. A study of the microbiology of shell eggs, meat and manufactured products and the basic principles of quality assurance. Food manufacturing and product development are discussed.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Recommended Foundation Course: ASI 108.

Typically Offered
Fall-Even Years

ASI 645 - Poultry Management

Credits 3

A detailed study of the production and management

practices involved in commercial poultry and game bird enterprises.

Note
Two hours lecture and two hours lab a week.

Repeat for Credit
N

Requisites
Prerequisite: Junior or senior standing.

Typically Offered
Fall-Odd Years

ASI 650 - Identification and Data Management of Food Animals

Credits 2

Procedures and the conventions required to accomplish individual identification for farm animals. Principles of sound data collection and management. Principles of automatic information and data capture technologies for transforming data into information. Guest lectures from allied industry and livestock producers will illustrate various products, services and applications.

Note
Two hours lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing.

Typically Offered
Fall

ASI 655 - Behavior of Domestic Animals

Credits 3

Students gain knowledge about the behavioral sciences' fields, historical perspectives, and scientific methodologies. Behavior is evaluated from a biological perspective (i.e. physiology, development, adaptation, and genetics). Students refine observational skills and identify methods for quantifying behavior and interpreting results to improve animal health, management, housing, training, and welfare.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and junior standing.

Typically Offered

Fall

ASI 658 - Animal Growth and Development

Credits 3

The molecular and endocrine mechanisms of prenatal and postnatal growth and development of muscle, bone, and adipose tissue will be discussed. Historical and current scientific literature will be reviewed and utilized to reinforce the topics covered.

Note

Three hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 150 and Junior standing.

Recommended Prerequisite: a course in biochemistry

Typically Offered

Spring

ASI 660 - International Study Experience in Animal Science

Credits 0-6

Seminar and travel course designed to prepare students before the experience and for students to analyze, critique, and report their experience of an international experience associated with study tours or short courses. Course will focus on appropriate oral and written documentation of the student learning objectives for course experience. The academic topics will vary with each international activity.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 661 - Animal Sciences and Industry Problems

Credits 0-18

Independent guided studies in any of the many fields associated with animals and animal products.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 662 - Special Topics in Animal Science

Credits 0-6

Seminars of special interest will be offered upon sufficient demand in selected areas relating to animal science.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ASI 671 - Meat Selection and Utilization

Credits 2

Emphasis on meat cut identification, muscle and bone anatomy, grades, fabricated meat, institutional cuts, specification writing, processing, meat preparation and shrinkage costs.

Note

One hour lecture-recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 and CHM 111.

Typically Offered

Fall

ASI 675 - Monogastric Nutrition

Credits 1

This advanced class provides a comparative summary of nutrition for domesticated monogastric animals, including digestive anatomy and the digestion, absorption, and metabolism of dietary energy (starch, fiber, lipids), proteins, vitamins, and minerals.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 220 or ASI 302

Typically Offered

Fall

ASI 676 - Avian Nutrition

Credits 1

Nutritional requirements of game birds, caged birds, exotics, and commercial poultry. Interactive discussion will be emphasized.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 675 or concurrent enrollment.

Typically Offered

Fall-Even Years

ASI 677 - Companion Animal Nutrition

Credits 1

This course is intended to be taken in sequence following Monogastric Nutrition, ASI 675. The course will cover the unique nature of nutrition for companion animals with an emphasis on the nutrition of dogs and cats. Details regarding dentition, digestion, metabolism and nutritional requirements will be covered. In addition, an overview of the nutrition of other minor companion species will be

provided. Besides standard assessments methods students will be expected to review current research publications on the topic and provide written and oral presentations germane to the topic.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 675 or concurrent enrollment.

Typically Offered

Fall-Odd Years

ASI 678 - Equine Nutrition

Credits 1

Equine digestive anatomy and physiology. Nutrient requirements of the equine as they relate to growth, work, reproduction and lactation, as well as the relationship of nutrition to disease and environment. Practical management considerations and current equine nutrition research will be reviewed.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 675 or concurrent enrollment.

Typically Offered

Fall

ASI 679 - Swine Nutrition

Credits 1

A study of the nutrient requirements of swine for various stages of production. Discussion of the interrelationships among nutrition and other factors (environment, management, and health) that affect performance.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 675 or concurrent enrollment.

Typically Offered

Fall

ASI 680 - Ruminant Nutrition**Credits 1**

Advanced study of nutritional management of different species of ruminant livestock. Topics covered include ruminal function, post-ruminal digestion and absorption, utilization of key nutrients, and discussion of select metabolic disorders.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 220 or 302.

Typically Offered

Spring

ASI 681 - Dairy Cattle Nutrition**Credits 1**

Nutritional management of dairy calves, replacement heifers, dry and lactating dairy cows. Diet formulation, feeding systems and current concepts in dairy cattle nutrition.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 680 or concurrent enrollment.

Typically Offered

Spring

ASI 682 - Formulation of Livestock and Poultry Diets**Credits 1**

Diet formulation for the major species of livestock and poultry. Major topics include hand formulation of diets; ingredient/nutrient cost comparisons; dry matter manipulation; computerized diet formulation; developing specifications for diets, supplements, basemixes and premixes; projecting animal performance; and feed labeling.

Note

Three hours lecture per week for five weeks.

Repeat for Credit

N

Requisites

Recommended prerequisite: ASI 675 or ASI 680 or concurrent enrollment.

Typically Offered

Fall

ASI 683 - Grazing Livestock Nutrition**Credits 1**

Nutritional management of grazing beef cattle. Nutrition of beef cows and stocker cattle maintained under grazing conditions. Major topics to be covered include nutrient requirements, forage intake, forage quality, and supplementation.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 680 or concurrent enrollment.

Typically Offered

Spring

ASI 684 - Nutrition of Feedlot Cattle**Credits 1**

Nutritional management of growing and finishing beef cattle maintained under confined feeding conditions. Utilization of cereal grains and byproducts in the production of beef. Major topics include nutrient

requirements, feed processing, growing-finishing systems, feed additives, metabolic disturbances, and nutrient management.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 680 or concurrent enrollment.

Typically Offered

Spring

ASI 685 - Stored Forage Systems for Ruminant Animals

Credits 1

A study of nutrient conservation in various stored forage systems including storage facilities and equipment, nutrient loss, aerobic deterioration, chemical and physical analysis. Discussions will also include the impact of stored forage systems on forage quality and the subsequent effects on digestion and utilization in ruminant animals.

Note

Three hours lecture a week for five weeks.

Repeat for Credit

N

Requisites

Prerequisite: ASI 680 or concurrent enrollment.

Typically Offered

Spring

ASI 695 - Principles of Equine Exercise Physiology

Credits 3

Physiological systems reactions and adaption to exercise and training in the equine athlete. Additional topics addressed will include biomechanics, injury prevention and rehabilitation.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Required Prerequisite: Junior standing.

Recommended Prerequisite: ASI 350, ASI 533, and a course in biochemistry

Typically Offered

Fall

ASI 710 - Physiology of Reproduction in Farm Animals

Credits 3

The physiological aspects of reproduction in farm animals including endocrine interrelationships controlling reproductive cycles and gamete production. Periodic demonstrations deal with specialized reproductive anatomy of farm animals, experimental techniques used in animal reproduction, and contemporary animal production practices.

Note

Three hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 400.

Typically Offered

Spring-Even Years

ASI 735 - Advanced Dairy Products Evaluation

Credits 2

Advanced training in the sensory analysis of dairy products, focusing on techniques for detecting and evaluating flavor, body and texture, and appearance. The course covers the scoring system used for dairy product judging and may include participation in collegiate dairy products evaluation contests.

Repeat for Credit

N

Requisites

Prerequisite: graduate student standing

Typically Offered
Spring

ASI 741 - Quantitative Genetics Applications of Matrix Algebra

Credits 1

The goal of this course is development of skills in matrix algebra to describe and solve problems in the agricultural and life sciences, with particular focus on quantitative genetics. The course is designed for students with no prior knowledge of matrix algebra, and whose formal training in mathematics may be somewhat limited. It will consider the vocabulary, concepts, application and, to a lesser extent, theory of matrix algebra that is relevant to graduate students in the agricultural and life sciences. Application exercises will consider ecological systems, genotypic transition matrices, selection indices, and the numerator relationship matrix. Application of methods such as least squares and canonical transformation to solve problems in the biological sciences using matrix algebra will also be introduced.

Repeat for Credit
N

Typically Offered
Fall

ASI 742 - Cybersheep: A Genetic Simulation Game

Credits 1

The goal of this course is for students to be able to make informed and effective decisions in a livestock breeding program. In order to accomplish this goal, the course will provide hands-on experience with selection and mating decisions, and their consequences through a genetic simulation. Genetic gains require time to achieve and there is very little opportunity for students to witness the consequences of breeding decisions in a course. The simulation is designed to offer an opportunity to see in real-time, the outcome of decision-making, and to experience the stochastic (chance) elements of a breeding program.

Repeat for Credit
N

Typically Offered
Fall

ASI 749 - Advanced Animal Breeding

Credits 3

Application of genetic principles to livestock improvement, selection methods, mating systems, heritability estimates and methods of analyzing genetic data.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Recommended prerequisite: ASI 500 and three hours in statistics.

Typically Offered
Spring

ASI 776 - Meat Industry Technology

Credits 3

Apply concepts and information about meat composition, product safety and spoilage, quality; formulation, processing and evaluation of cured, precooked, and sausage; packaging, troubleshooting, and plant organization. This is a web-based lecture class intended for distance education students.

Repeat for Credit
N

Requisites
Prerequisite: ASI 350.

Typically Offered
Fall, Spring, Summer

ASI 777 - Meat Science and Muscle Biology

Credits 3

An in depth-overview of the conversion of muscle to meat as well as the impact of inherent characteristics of muscle on fresh meat quality. The fundamental concepts in the course will be discussed with an application to industry standards.

Note
Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 350; senior or graduate standing.

Typically Offered

Fall

ASI 799 - Graduate Internship in Animal Sciences and Industry**Credits 1-4**

In-depth work-study experiences on beef cattle, sheep, dairy cattle, swine, horse or poultry production operations or in animal food products plants.

Repeat for Credit

Y

Requisites

Prerequisite: Permission of supervising faculty member.

Typically Offered

Fall, Summer

ASI 802 - Gametes, Embryos, and Stem Cells in Farm Animals**Credits 2**

A study of gametes, embryos, pregnancy, and stem cells in farm species including supporting information from laboratory species and humans. Emphasis will be on the regulation of stem cells, gametes, and embryos and on the conceptus-maternal interactions to establish and maintain pregnancy and program conceptus and postnatal development.

Note

Two hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Fall-Odd Years

ASI 810 - History and Perspectives in Animal Breeding and Genetics**Credits 1**

The goal of this course is to provide students with a historical perspective of the discipline of Animal Breeding and Genetics and an appreciation for the contributions of several scientists that have significantly impacted the discipline. Weekly lectures will consist of pre-recorded interviews with scientists that have had an international impact in the field of animal breeding and genetics.

Repeat for Credit

Y

Typically Offered

Fall

ASI 811 - Primer to Quantitative Genetics**Credits 1**

The goal of this course is to provide students with an introduction to the language and basic principles of quantitative genetics. Its purpose is to develop foundational knowledge for students entering a graduate program in animal breeding and genetics. Topics included will be the basic model for quantitative genetics (additive and non-additive genetic effects, including Mendelian sampling, and environmental effects), sources of variation, heritability, family resemblance and repeatability, selection response, and family selection. Expected values and concepts in applied statistics (e.g., linear regression) will also be considered.

Repeat for Credit

N

Typically Offered

Spring

ASI 812 - Selection Index Theory and Application**Credits 1**

The overall goal of this course is to increase your skills and knowledge related to the design of animal breeding programs. The focus will be on the application of index theory to the definition of breeding objectives in animal agriculture. The course will also introduce approaches for deriving economic weights, which are useful when

predicting economic response to selection.

Repeat for Credit

N

Typically Offered

Spring

ASI 813 - Economic Breeding Programs

Credits 1

The primary goal of this course is to provide a survey of methodology for developing an economic basis for multiple trait selection to improve the profitability of production. Much of the material is abstracted from the scientific literature, from which a sampling of relevant references will be provided. Therefore, an overarching goal of this course is to instill the capacity to critically analyze relevant literature as an aid to solving future problems. Specific topics included are: a review of concepts relevant to selection index, an introduction to the concept of systems analysis, linear programming, and simulation with emphasis on economic values useful for selection index.

Repeat for Credit

N

Typically Offered

Spring

ASI 814 - Heterosis and Crossbreeding Systems

Credits 1

The goal of this course is to provide students with an introduction to the principles of heterosis and mating systems utilizing crossbreeding. Students completing this course should be able to evaluate and compare various crossbreeding mating schemes through predicted performance of the potential progeny and overall system performance.

Repeat for Credit

N

Typically Offered

Spring

ASI 815 - Application of Quantitative Genetics in R Software

Credits 1

Introduction and application of R software for basic and intermediate tasks in quantitative genetic analyses. The use of R as a high-level programming language and a gateway for more formal low-level languages. No prior exposure to the language is necessary.

Repeat for Credit

N

Typically Offered

Spring

ASI 820 - Rumen Metabolism

Credits 3

Metabolism, absorption, digestion, and passage of nutrients in the rumen; factors affecting the environment of the rumen; certain aspects of rumen function and dysfunction; techniques used in rumen research.

Note

Three one-hour lecture A week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 318 and BIOCH 521 or BIOCH 755.

Typically Offered

Spring-Even Years

ASI 825 - Stress Physiology of Livestock

Credits 3

Integrative physiology of livestock during environmental, management, and pathological stresses.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 533 and BIOCH 521.

Typically Offered

Fall-Even Years

ASI 826 - Nutritional Physiology

Credits 3

The course focuses on the structures and function of the gastrointestinal tract, with an emphasis on digestive physiology in the small intestine. Details of gastrointestinal tract secretion, regulation, digestion, and absorption of the major nutrient groups are emphasized with species comparisons.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Spring-Odd Years

ASI 830 - Neuroendocrine Physiology

Credits 1

Neuroendocrine regulation of reproduction, growth, and metabolism, with an emphasis on neuroendocrinology of domestic livestock.

Note

Three hours recitation per week for 5 weeks.

Repeat for Credit

Y

Requisites

Recommended Prerequisite: BIOCH 521 and ASI 710.

Typically Offered

Spring-Odd Years

ASI 831 - Molecular Reproductive Endocrinology

Credits 1

A study of molecular mechanisms that control gene expression in mammals, with an emphasis on genes and their products that control reproduction.

Note

Three hours recitation per week for 5 weeks.

Repeat for Credit

Y

Requisites

Recommended Prerequisite: BIOCH 521, ASI 710 and ASI 830.

Typically Offered

Spring-Odd Years

ASI 832 - Ovarian Physiology

Credits 1

Endocrine and physiologic control of ovarian functions in domestic livestock.

Note

Three hours recitation a week for 5 weeks.

Repeat for Credit

Y

Requisites

Recommended Prerequisite: BIOCH 521, ASI 710 and ASI 830.

Typically Offered

Spring-Odd Years

ASI 835 - Advanced Swine Nutrition

Credits 1

Advanced study of the feeding systems and practices and nutrient requirements for swine for various stages of production. An in-depth analysis of applied swine nutrition.

Note

One hour lecture per week

Repeat for Credit

N

Requisites

Prerequisite: ASI 679 or concurrent enrollment

Typically Offered

Fall

ASI 840 - Techniques in Domestic Animal Behavior

Credits 2

A combined seminar and laboratory type course. Current and classical studies reported and discussed, relationships between behavior and other disciplines explored and methods of data collection examined. Small-scale demonstration experiments planned, executed and reported orally and/or in scientific written style.

Note

One hour recitation and two hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 655 and STAT 225.

Typically Offered

Spring-Even Years

ASI 860 - Analytical Techniques--Sample Preparation and Beginning Analyses

Credits 1

Sample collection, processing and handling methodologies will be addressed as they pertain to research methods in the animal sciences. Basic laboratory techniques, sample collection, and analyses of moisture and nitrogen will be covered.

Note

Two hours lecture, eight hours lab and one hour recitation a week for three weeks.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 350.

Typically Offered

Fall

ASI 861 - Analytical Techniques--Mineral Analyses

Credits 1

This course focuses on the analysis of minerals in common feedstuffs. This course will cover sample preparation and atomic absorption, emission, ultraviolet/visible and fluorimetric spectrophotometric methods of analysis of feedstuffs and biological fluids.

Note

Two hours lecture, eight hours lab and one hour recitation a week for three weeks.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 350.

Typically Offered

Fall

ASI 862 - Analytical Techniques--Carbohydrate and Lipid Analyses

Credits 1

This course covers the analysis of carbohydrate and lipid components of feedstuffs and biological materials using conventional as well as HPLC and gas chromatographic methods.

Note

Two hours lecture, eight hours lab and one hour recitation a week for three weeks.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 350.

Typically Offered

Fall

ASI 863 - Analytical Techniques--Radioisotope Use

Credits 1

Study of radioisotope use in physiological applications of research in domestic animals including radioactive decay, detection methodology, and isotope dilution.

Note

Two hours lecture, eight hours lab and one hour recitation a

week for three weeks.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Fall-Even Years

ASI 864 - Analytical Techniques-Immunoassays

Credits 1

Study of measurement of biological substances and hormones utilizing enzyme-linked immunoassays (ELISA) and radioimmunoassays (RIA).

Note

Two hours lecture, eight hours lab and one hour recitation a week for three weeks.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Fall-Even Years

ASI 865 - Analytical Techniques: Protein Analysis

Credits 1

The course will provide an overview of techniques commonly used for protein analysis in research using animal tissues. Topics will include protein extraction from tissues, determining protein concentration, types of gel electrophoresis for different protein sizes, Western blotting and proteomics.

Note

Course will be offered the first 3 weeks of the Fall Semester. Components include three 90-minute lectures + one 8-hour laboratory per week.

Repeat for Credit

N

Typically Offered

Fall

ASI 870 - Linear Models in Animal Breeding

Credits 1

Students completing this course will learn about linear models used in Animal Breeding. These models will be discussed in the context of the random variable that is to be predicted. Specifically, the course will cover animal models, sire/maternal grandsire models, and sire models. Models including a single record, repeated records, and models with both direct and maternal effects will be discussed.

Repeat for Credit

N

Typically Offered

Fall

ASI 871 - Genetic Prediction

Credits 1

The goal of this course is to increase student understanding of best linear unbiased prediction and to develop skills in genetic prediction. A wide array of material will be covered with emphasis on real-world datasets designed to develop applied analytical skills relative in animal breeding. Topics will include data integrity diagnosis, contemporary grouping strategies, adjusting for known non-genetic effects, and use of software to perform genetic evaluations. Students will develop procedures for the utilization of various sources of information for the calculations of predictions of genetic merit in the form of estimated breeding values.

Repeat for Credit

N

Typically Offered

Fall

ASI 872 - Applied Variance Component Estimation in Livestock Genetics

Credits 1

The goal of this course is to extend upon content covered in linear models and genetic prediction, with specific emphasis on estimation of (co)variance components and

genetic parameters required to solve mixed models typical in livestock genetics. Upon successful completion of this module, students should have an applied knowledge of approaches used to estimate the G and R sub-matrices of the mixed model equations. Several tools will be used to demonstrate the models and approaches most commonly used in parameter estimation. Where appropriate, scientific literature that explains their implementation, and some attributes of the solutions obtained will be used.

Repeat for Credit

N

Typically Offered

Fall

ASI 873 - Prediction and Control of Inbreeding in Breeding Programs

Credits 1

The goal of this course is for students to be introduced to, and to gain an understanding of, the concepts of inbreeding and genetic diversity, the impact of inbreeding on animal breeding and production populations, and of strategies to control and manage rates of inbreeding in animal breeding and production populations. The use of genomic data to assess and control inbreeding also will be discussed.

Repeat for Credit

N

Typically Offered

Fall

ASI 874 - Marker Assisted and Gene-Assisted Selection

Credits 1

The goal of this module is to increase student understanding of potential methods for incorporating marker genetic information into selection decisions. Topics will include but are not limited to recombination, single-gene tests, molecular breeding values, suggested producer guidelines for use of the technologies, and incorporation of genomic information into genetic prediction procedures.

Repeat for Credit

N

Typically Offered

Spring

ASI 875 - Introduction to Marker Association Analysis and QTL Detection

Credits 1

The goal of this course is to introduce the basic concepts of using genetic markers to identify QTL and of estimating marker-trait associations, and to expose students to applications of these methodologies. Materials will cover the basics of linkage and linkage disequilibrium, alternate designs or population structures for QTL mapping, and statistical methods for QTL detection, including QTL interval mapping and genome-wide association analyses. Properties, advantages, disadvantages, and requirements of alternate designs and analysis strategies will be discussed.

Repeat for Credit

N

Typically Offered

Spring

ASI 876 - From Markers to Gene Function: Functional Change

Credits 1

This course takes the results from association analyses and learns how these markers translate into functional changes in the animal genome and in animal performance. Topics covered in the course include an introduction to the tools used to generate genomic data followed by introduction and application of key bioinformatics websites, databases to identify causative genetic variation, and develop gene pathways and networks.

Repeat for Credit

N

Typically Offered

Spring

ASI 877 - MCMC Methods in Animal Breeding: A Primer

Credits 1

The goal of this course is to introduce computational techniques based on simulation that have become a staple in the field of animal breeding (and beyond) over the last 20 years. An overview of the most popular Monte Carlo methods will be provided to the students with an emphasis

on hands on reproducible examples developed through the R software. Minimal exposure to the R programming language will be required while no previous exposure to Monte Carlo methods is required. While a few examples in the class will be set in a Bayesian framework, no previous exposure to Bayesian statistics is required

Repeat for Credit

N

Typically Offered

Spring

ASI 879 - Applications in Swine Nutrition

Credits 2

Application of key principles of swine nutrition relating to nutrients, requirements and feeding programs for pigs of various stages of production.

Note

Two hours lecture per week.

Repeat for Credit

N

Requisites

Recommended ASI 835

Typically Offered

Spring-Even Years

ASI 890 - Graduate Seminar in Animal Sciences and Industry

Credits 1

Discussion of research and technical problems in the discipline. Attendance required of all departmental graduate students. Maximum of two hours may be applied toward an advanced degree.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ASI 898 - Master's Report

Credits 2

A written report of either research or problem work on a topic in the major field.

Note

Consult major professor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 899 - Master's Research in Animal Sciences and Industry

Credits 1-18

Research leading to the completion of a master's thesis.

Note

Consult major professor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 902 - Topics in Animal Science

Credits 1-6

Discussion and lectures on important areas and contributions in the field of animal science not covered in present courses.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASI 920 - Energy Utilization in Domestic Livestock

Credits 2

Comprehensive discussion of the development and application of energy systems used to guide livestock

feeding, procedures used in energy experimentation, dietary/digestive/environmental factors that influence efficiency of energy utilization, and the efficiencies with which different energy substrates are used to support various maintenance and production functions. Emphasis will be placed upon ruminants.

Note

Two hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Fall-Odd Years

ASI 921 - Protein and Amino Acid Utilization in Domestic Livestock

Credits 2

Comprehensive discussion of protein and amino acids and their role in digestion, absorption, metabolism, protein synthesis, and degradation in livestock. Emphasis on techniques and interpretation of results from experiments designed to evaluate protein utilization and factors which influence amino acid metabolism in monogastrics and ruminants.

Note

Two hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 820 or ASI 826.

Typically Offered

Fall-Even Years

ASI 923 - Vitamin and Mineral Nutrition of Domestic Livestock

Credits 2

A detailed examination of the vitamin and mineral nutrition of domestic livestock. Emphasis will be placed on current literature on the determination of vitamin and mineral requirements, practical considerations for vitamin and

mineral supplementation in livestock feeding, and the potential for vitamin and mineral deficiency and toxicity in domestic livestock.

Note

One hour lecture and two hour lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 820 or ASI 826.

Typically Offered

Spring-Even Years

ASI 925 - Rumen Microbiology

Credits 3

Three hours lecture a week dealing with the microorganisms of the rumen, their habitat, diversity, structure, interactions, and biochemical activities. Techniques for enumeration, isolation and identification of ruminal microorganisms.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 255.

Typically Offered

Spring-Odd Years

ASI 930 - Advanced Meat Science

Credits 3

Basic biochemical, physiological, and histological properties of muscle and related tissues; muscle contraction, rigor mortis, and muscle hydration; maturation; processing by thermal, dehydration, and cold sterilization techniques; meat flavor chemistry; meat research techniques.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 777 or equiv.; and a course in biochemistry.

Typically Offered
Spring-Even Years

ASI 961 - Graduate Problem in Animal Sciences and Industry

Credits 1-18

In-depth study of a topic supervised by a member of the graduate faculty.

Note
Permission of supervising faculty member.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ASI 990 - Seminar in Animal Sciences Research

Credits 1

Weekly evaluation of the scientific literature and the reasoning underlying the selection of research problems, the formulation and testing of hypotheses, and the evaluation and presentation of results.

Note
Approval of major professor.

Repeat for Credit
Y

Typically Offered
Fall, Spring

ASI 999 - Doctoral Research in Animal Sciences and Industry

Credits 1-18

Research leading to the completion of a Ph.D. Degree.

Note
Consult major professor.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ASMS 120 - Intro to Food and Feed Manufacturing Employee Safety

Credits 1

This course introduces students to the fundamental principles of employee safety in food and feed manufacturing environments. Students will learn about workplace hazards, safety protocols, and regulatory requirements designed to protect workers from injury and illness. The course covers essential topics such as personal protective equipment (PPE), machine safety, chemical handling, and emergency procedures. By the end of the course, students will understand how to create and maintain a safe working environment in compliance with industry safety standards.

Repeat for Credit
N

Typically Offered
Fall

ASMS 213 - Emerging Technologies in Power, Structural, and Technical Systems

Credits 1

The continual evolution of the agricultural mechanics industry, necessitates the introduction of emerging practices and equipment to new teachers. The course includes demonstrations, hands-on activities, and field trips to be used in high school programs.

Note
One hour of lecture and two hours of laboratory each week for 8 weeks.

Repeat for Credit
N

Requisites
Prerequisite: Agricultural Education Majors only

Typically Offered
Spring

ASMS 214 - Agricultural Engine Systems

Credits 1

Theory, knowledge and skills necessary for the repair and maintenance of small gas engines. Special focus on the teaching of engine systems and management of laboratory instruction.

Note

One hour of lecture and two hours of laboratory each week for 8 weeks.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education majors only.

Typically Offered

Fall

ASMS 215 - Agricultural Electrical Systems

Credits 1

Theory and practice of electrical wiring systems used in agricultural settings. Special focus on the teaching of electrical systems.

Note

One hour of lecture and two hours of laboratory each week for 8 weeks.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education Majors only.

Typically Offered

Spring

ASMS 216 - Agricultural Structures Education

Credits 1

Theory, knowledge and skills for construction/fabrication in agricultural structure projects. Emphasis on: laboratory safety, measurements, material selection, basic techniques, plumbing, and basic surveying.

Note

One hour of lecture and two hours of laboratory each week for 8 weeks.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education majors only.

Typically Offered

Fall

ASMS 220 - Employee Safety in Grain Handling Facilities

Credits 1

This course focuses on employee safety in grain handling facilities, addressing the unique hazards associated with grain storage, transport, and processing. Students will learn about the risks of grain dust explosions, confined space entry, machine safety, and proper use of personal protective equipment (PPE). The course covers safety protocols, emergency procedures, and regulatory standards specific to grain handling operations. By the end of the course, students will be equipped to identify hazards and implement safety measures to ensure a safe working environment in grain facilities.

Repeat for Credit

N

Requisites

Corequisite: ASMS 120

Typically Offered

Fall

ASMS 221 - Safety Applications Practicum

Credits 1

This course offers a hands-on, applied learning experience focused on employee safety in grain handling and food and feed manufacturing facilities. Students will actively engage in safety assessments, hazard identification, and the implementation of safety protocols, including proper use of personal protective equipment (PPE), confined space entry procedures, and machine safeguarding. The course provides practical, real-world training in safety compliance, risk mitigation, and emergency response. By the end of the course, students will have gained valuable experience in

applying safety practices to maintain safe working environments in high-risk industrial settings.

Repeat for Credit

N

Requisites

Corequisite: ASMS 220

Typically Offered

Fall

ASMS 260 - Agricultural Metal Processes Education

Credits 3

Provide students with the theory, knowledge and skills necessary for the construction/fabrication of metal projects. Emphasis will be placed on: laboratory safety, general laboratory measurements, metal identification/characteristics, oxyacetylene welding and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), plasma cutting, and project construction.

Note

Two hours of lecture and three hours of laboratory each week.

Repeat for Credit

N

Requisites

Prerequisite: Agricultural Education majors only.

Typically Offered

Fall, Spring

ASMS 421 - Agricultural and Occupational Safety Program Management

Credits 3

Addresses the development and administration of comprehensive safety, health, and environmental management programs in agriculture and industry.

Repeat for Credit

N

Requisites

Junior or Senior standing

Typically Offered

Fall

ASMS 422 - Environmental Regulatory Compliance

Credits 3

Surveys requirements of air, land, and water regulations as they relate to agribusiness and industry. Focuses on practical applications in the work environment such as identification of pollution sources, evaluation strategies, engineering controls, permitting processes, and reporting.

Repeat for Credit

N

Requisites

Junior or Senior standing

Typically Offered

Spring

ASMS 423 - Agricultural and Occupational Safety I

Credits 3

Examines traumatic injuries and their control in agricultural and industrial settings, with a focus on structural safety, walking and working surfaces, falls, electrical safety, and safety for livestock handlers.

Repeat for Credit

N

Requisites

Junior or Senior standing

Typically Offered

Fall

ASMS 424 - Agricultural and Occupational Health I

Credits 3

Investigates chemical health hazards and their control in the context of agriculture and industry. Topics include hazardous gases, vapors, and aerosols; dermal hazards; pesticides; exposures to veterinary pharmaceuticals;

methods of hazard assessment; and methods of control.

Repeat for Credit

N

Requisites

Junior or Senior standing

Typically Offered

Fall

ASMS 453 - Agricultural and Occupational Safety II

Credits 3

Explores agricultural and industrial traumatic injuries involving machine hazards; materials handling and storage; confined spaces; fire protection and prevention; and pressurized vessels, fluids, and environments.

Repeat for Credit

N

Requisites

Junior or Senior standing

Typically Offered

Spring

ASMS 454 - Agricultural and Occupational Health II

Credits 3

Analyzes occupational health hazards and controls in agricultural and industrial settings, with a focus on biological hazards, ergonomic stressors, and physical hazards (including noise, vibration, extreme temperatures, and radiation).

Repeat for Credit

N

Requisites

Junior or Senior standing

Typically Offered

Spring

ASMS 486 - Topics in Agricultural and Occupational Safety and Health

Credits 0-6

Examination of current topics in agricultural and occupational safety and health.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ASMS 496 - Problems in Agricultural and Occupational Safety and Health

Credits 1-3

Independent guided studies in any of the many fields associated with agricultural and occupational safety and health.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

ASMS 511 - Occupational and Agricultural Health

Credits 3

Addresses the identification, evaluation, and control of health hazards in occupational and agricultural settings. Topics include occupational toxicology, air contaminants, noise, radiation, thermal stress, ergonomics, biological hazards, emerging health risks, and health risks of special populations.

Note

This is an online course.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing or above

Typically Offered

On sufficient demand

ASMS 512 - Occupational and Agricultural Injury Prevention

Credits 3

Explores traumatic injuries and their prevention in occupational and agricultural settings. Topics include falls, workplace violence, animal handling, mobile equipment, fixed machines, work tools, electrical hazards, fires, and explosions.

Note

This is an online course.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing or above

Typically Offered

On sufficient demand

ASMS 521 - Occupational and Agricultural Safety and Health Interventions

Credits 3

Examines the design and evaluation of behavioral interventions to prevent occupational and agricultural injuries and illnesses. Topics include theories of safety and health behavior; effective communication and persuasion strategies; planning, conducting and evaluating interventions; interventions for diverse populations; and intervention strategies in evolving occupational and societal contexts.

Note

This is an online course.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing or above

Typically Offered

On sufficient demand

ASMS 721 - Agricultural and Occupational Safety Program Management

Credits 3

Addresses the development and administration of comprehensive safety, health, and environmental management programs in agriculture and industry.

Repeat for Credit

N

Requisites

Prerequisite: Graduate or junior or senior level students

Typically Offered

Fall

ASMS 722 - Environmental Regulatory Compliance

Credits 3

Surveys requirements of air, land, and water regulations as they relate to agribusiness and industry. Focuses on practical applications in the work environment such as identification of pollution sources, evaluation strategies, engineering controls, permitting processes, and reporting.

Repeat for Credit

N

Requisites

Prerequisite: Graduate or junior or senior level students

Typically Offered

Spring

ASMS 723 - Agricultural and Occupational Safety I

Credits 3

Examines traumatic injuries and their control in agricultural and industrial settings, with a focus on structural safety, walking and working surfaces, falls, electrical safety, and safety for livestock handlers.

Repeat for Credit

N

Requisites

Prerequisite: Graduate or junior or senior level students

Typically Offered

Fall

ASMS 724 - Agricultural and Occupational Health I

Credits 3

Investigates chemical health hazards and their control in the context of agriculture and industry. Topics include hazardous gases, vapors, and aerosols; dermal hazards; pesticides; exposures to veterinary pharmaceuticals; methods of hazard assessment; and methods of control.

Repeat for Credit

N

Requisites

Prerequisite: Graduate or junior or senior level students

Typically Offered

Fall

ASMS 753 - Agricultural and Occupational Safety II

Credits 3

Explores agricultural and industrial traumatic injuries involving machine hazards; materials handling and storage; confined spaces; fire protection and prevention; and pressurized vessels, fluids, and environments.

Repeat for Credit

N

Requisites

Prerequisite: Graduate or junior or senior level students

Typically Offered

Spring

ASMS 754 - Agricultural and Occupational Health II

Credits 3

Analyzes occupational health hazards and controls in agricultural and industrial settings, with a focus on biological hazards, ergonomic stressors, and physical hazards (including noise, vibration, extreme temperatures, and radiation).

Repeat for Credit

N

Requisites

Prerequisite: Graduate or junior or senior level students

Typically Offered

Spring

ATHM 101 - Varsity Baseball

Credits 1

Varsity Baseball

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ATHM 102 - Varsity Basketball

Credits 1

Varsity Basketball

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHM 103 - Varsity Track Instructor

Credits 1

Varsity Track Instructor

Note

Consent of instructor

Repeat for Credit

N

Typically Offered

Spring

ATHM 104 - Varsity Football

Credits 1

Varsity Football

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHM 105 - Varsity Golf

Credits 1

Varsity Golf

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHM 108 - Varsity Track

Credits 1

Varsity Track

Repeat for Credit

Y

Typically Offered

Spring

ATHW 150 - Intercollegiate Basketball

Credits 1

Intercollegiate Basketball

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHW 152 - Intercollegiate Track

Credits 1

Intercollegiate Track

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHW 154 - Intercollegiate Tennis

Credits 1

Intercollegiate Tennis

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHW 155 - Intercollegiate Volleyball

Credits 1

Intercollegiate Volleyball

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Spring

ATHW 156 - Intercollegiate Rowing

Credits 1

Intercollegiate Rowing

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall

ATHW 157 - Intercollegiate Golf

Credits 1

Intercollegiate Golf

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

ATHW 158 - Intercollegiate Soccer

Credits 1

Intercollegiate Soccer

Repeat for Credit

Y

Typically Offered

Other

ATM 101 - Introduction to Biological and Agricultural Engineering and Technology

Credits 1

Introduction to discipline, department, university, and profession. Exploration of career options. Gain skills through application-oriented problem solving.

Note

One hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Open to ATM majors only.

Typically Offered

Fall

Crosslisted

BAE 101

ATM 160 - Engineered Systems and Technology in Agriculture

Credits 3

An introductory course designed for non-engineering majors. This course introduces engineering principles and problem solving associated with energy resources and power systems for agriculture, machinery systems, natural resources and environmental management, and food and fiber processing and storage.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Not open to seniors.

Typically Offered

Fall

ATM 240 - Principles of Injury Prevention

Credits 3

This is an overview course that will cover a variety of safety and health topics focusing on injury prevention in the home, motor vehicle, public, and work environments. The enduring understanding that forms the basis for every discussion and activity in this course is all of us make decisions every day that impact our safety as well as the safety of those around us.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall

ATM 245 - Introduction to Biomanufacturing Technology

Credits 3

History of biomanufacturing technology and its impact; overview of related industries including biopharmaceuticals, cellular agriculture, precision fermentation, and brewing; careers; fundamentals of biomanufacturing processes including cell types, gene technology, and unit operations.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 or CHM 210 or BIOCH 265.

Typically Offered

Fall, Spring

ATM 250 - Chemical Application Systems

Credits 2

Systems, components, operation practices, and safety procedures used in the chemical application industry. Liquid and granular application systems and respective components will be studied along with procedures for equipment sizing and maintenance, minimizing drift, systems calibration, and safe handling, transporting, storage, disposal and spill clean-up of agrichemicals.

Note

Two hours lecture a week.

Repeat for Credit

N

Typically Offered

Spring

ATM 251 - Chemical Application Systems Laboratory

Credits 1

Laboratory and hands-on activities on pumps, valves, nozzles, drift measurement, and application technology used in the home and garden, turf, private and commercial agricultural, aerial, and research industries.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Must be taken concurrent with ATM 250.

Typically Offered

Spring

ATM 331 - Professional Practice for Agricultural Technology Managers

Credits 1

A preparatory course for ATM Capstone Project course to explore project ideas, build project teams, and chose a project to complete for the capstone project in the following semester. Topics include professionalism, project management, intellectual property, organizational behavior and ethics.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

ATM 340 - Occupational Safety

Credits 3

This is a survey course that identifies safety and health risks in industrial work environments. The enduring understanding that forms the basis for every discussion and activity in this course is as a manager or supervisor; you are responsible for the safety of all employees under you.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ATM 240.

Typically Offered

Spring

ATM 345 - Cell Culture Technology in Biomanufacturing**Credits 3**

Cell culture and fermentation technology in biomanufacturing including media optimization, cell types and growth, mass balance concepts, selection of bioreactor and operational modes for microbial fermentation and mammalian cell cultures.

Repeat for Credit

N

Requisites

Prerequisites: MATH 150 or MATH 205 or MATH 220, BIOL 198 or CHM 210 or BIOCH 265.

Recommended Foundation Course: ATM 245

Typically Offered

Fall

ATM 370 - Biorenewable Systems**Credits 3**

Converting biorenewable resources into bioenergy and bio-based products. Biorenewable concepts as they relate to drivers of change, feedstock production, processes, products, co-products, economics, transportation/logistics, and marketing.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110, MATH 100, CHEM 210.

Typically Offered

Fall

ATM 445 - Separation Technologies for Biomanufacturing**Credits 3**

Overview of separation technologies used in biomanufacturing facility including purification, principles of operations used for purification and polishing of active product ingredients such as proteins and peptides, common impurities and removal strategies, process integration, and risk management.

Repeat for Credit

N

Requisites

Prerequisite: MATH 150 or MATH 205 or MATH 220, BIOL 198 or CHM 210 or BIOCH 265.

Recommended: ATM 245 and/or ATM 345

Not available for credit for students with BAE 626 or CHE 626

Typically Offered

Spring

ATM 446 - Regulatory Affairs for Biomanufacturing**Credits 1**

Regulations and compliance for the biomanufacturing industry in the United States with a focus on biologics. Topics include regulatory framework, quality assurance procedures in a biomanufacturing facility (GLP and cGMP), preparation for regulatory inspection and facility audit.

Repeat for Credit

N

Requisites

Prerequisite: ATM 245

Typically Offered

Spring

ATM 450 - Sensors and Controls for Agricultural and Biological Systems**Credits 3**

Applications of instrumentation. Sensors used in agricultural machines and processes for measurement of voltage, force, torque, pressure, displacement, velocity, acceleration, flow, temperature, humidity, etc. Analog and digital signal conditioning and processing. Feedback

controls concept. Computer interface.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 113 or PHYS 115, ATM 160 or MATH 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ATM 455 - Engines and Power Transfer

Credits 3

Principles, operation, and analysis of engine thermodynamics, fuel and combustion, engine components, engine cycles, engine power transfer and efficiencies, and exhaust gas emissions. Selection of bearings and design of belt, chain, gear, and shaft drives. Operation and performance analysis of hydraulic power components and systems, fluid mechanics, and hydraulic motors.

Note

Three hours recitation a week. Students cannot take ATM 455 in place of BAE 450 to fulfill requirements.

Repeat for Credit

N

Requisites

Prerequisite: BAE 350.

Typically Offered

Spring

ATM 460 - Internship in Agricultural Technology Management

Credits 1-3

Intern programs in agricultural technology management.

Note

One hour of credit for each four weeks of supervised and evaluated off-campus work experience with cooperating employers. A maximum of 3 hours may be applied to a BS in agricultural technology management.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

ATM 497 - Agricultural Technology Management

Credits 0-3

Undergraduate research experience for agricultural technology management students.

Note

Instructor approval.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ATM 511 - Agricultural Building Systems

Credits 3

Environmental control systems for agricultural buildings; structural members and systems for agricultural buildings; farmstead planning concepts.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ATM 160 or PHYS 113 or PHYS 115.

Typically Offered

Fall

ATM 515 - Emerging Topics in Agricultural Technology Management

Credits 2-3

Topics in the application of technical principles to agricultural technology management offered through collaborative distance education programs such as AG*IDEA.

Note

Approval of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ATM 536 - Agricultural Technology Management Capstone Project I**Credits 3**

A team-oriented laboratory for Agricultural Technology Management students to complete an open-ended project related to the management of technology in agriculture.

Note

Students that take ATM 536 as a requirement for their ATM degree cannot take BAE 536 later for an elective credit.

Repeat for Credit

N

Requisites

Prerequisites: ATM 331 and senior standing in ATM program.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

ATM 540 - Introduction to Food Engineering**Credits 3**

Material and energy balances with application to food processing. Fluid flow and heat transfer in food processing. Thermodynamic properties and laws. Conc. enrollment in ATM 541 is urged.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 113 or 115, BIOCH 120 or CHM 190, MATH 210 or 205.

Typically Offered

Fall

ATM 541 - Introduction to Food Engineering Laboratory Exercises**Credits 1**

Laboratory experiments supplementing ATM 540.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ATM 540.

Typically Offered

Fall

ATM 545 - Processing and Storage of Grains**Credits 3**

Principles of mass and energy balances, materials handling, along with the drying, storage, and bioprocessing of grains and biomass.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ATM 160 and PHYS 113

Typically Offered

Spring-Even Years

ATM 550 - Precision Agriculture Technologies

Credits 3

Application of precision technologies for gathering information to assist decision making for production systems. Topics will include global positioning systems, vehicle guidance systems, crop yield monitors, variable rate control systems for applicators, and the communication among these devices.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 150 or equivalent, PHYS 113 or PHYS 115, and STAT 225 or STAT 240 or STAT 250.

Typically Offered

Fall

ATM 558 - Hydrology and Soil Erosion Management**Credits 3**

Covers the water cycle and watershed hydrology, with an emphasis on precipitation, evapotranspiration, runoff, soil water movement, and aquifers; Soil erosion and water quality concerns; Engineered conservation practices to manage runoff, erosion, and water shortage issues; Site assessment techniques including surveying, mapping, watershed delineation, and data collection and analysis.

Note

Three hours recitation a week

Repeat for Credit

N

Requisites

Prerequisite: AGRON 205.

Typically Offered

Spring

ATM 610 - Problems in Agricultural Technology Management**Credits 1-3**

Current and advanced problems in agricultural technology

management.

Note

No more than 3 hours of ATM 610 can be applied to the degree. Instructor approval.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ATM 620 - Topics in Agricultural Technology Management**Credits 1-3**

Topics for the understanding, management, or application of emerging technologies in agricultural systems. Topics announced when offered.

Note

Instructor approval.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ATM 636 - Agricultural Technology Management Capstone Project II**Credits 1-3**

A continuation of ATM 536. Completion of a team-oriented capstone project, with emphasis on implementation, evaluation, documentation, and presentation of the project.

Repeat for Credit

N

Requisites

Prerequisite: ATM 536 or instructor permission

Typically Offered

Spring

ATM 653 - Water Management and Irrigation Systems

Credits 2

Management of water in crop production systems, crop water use, and irrigation scheduling. Fundamentals of water flow in pipe networks, pumping plants, and irrigation systems.

Note

Two hours recitation

Repeat for Credit

N

Requisites

Prerequisite: ATM 558.

Typically Offered

Fall

ATM 654 - Water Management and Irrigation Systems Lab**Credits 1**

Laboratory and hands-on activities on soil water balance characteristics, crop water use, water flow in pipe networks, pump hydraulics, sprinkler nozzles, drip irrigation systems, water filtration systems, and chemigation systems.

Note

Three hour lab each week.

Repeat for Credit

N

Requisites

Prerequisite OR Corequisite: Must be taken after or concurrent with ATM 653, and junior standing or higher.

Typically Offered

Fall

ATM 661 - Watershed Assessment and Management**Credits 3**

Overview of water legislation and policies (e.g. Clean Water Act, NPDES, TMDL). Principles of watershed pollutant sources, fate, and transport. Impacts of watershed protection and restoration strategies on water and environmental quality.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 or CHM 210 and BIOL 198.

Typically Offered

Fall

ATM 702 - Topics in Agricultural Technology**Credits 1**

The selection, operational theory, repair, maintenance, adjustment, and application of equipment and materials for agricultural systems.

Note

Instructional materials, teaching aids and advanced methodology will be developed with respect to the topic.

Repeat for Credit

Y

Requisites

Prerequisite: ATM 659.

Typically Offered

Fall, Spring

AVM 101 - Introduction to Aircraft Materials and Tooling Standards**Credits 2**

Skills and techniques essential to understanding aircraft material properties and fabrication techniques. Emphasizes knowledge and practical experiences involving: shop safety, organization and human factors associated with shop practices, basic aircraft structural materials and hardware familiarization, fluid lines and fittings, hand tool selection and use, and aviation-specific dimensional inspection tools and techniques, aircraft hardware identification and applications, cleaning and corrosion control, aircraft metal selection an applications, and aircraft material inspection fundamentals.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVM 102 - Aviation Regulations, Compliance and Operations**Credits 2**

A review of the role and organizational structure of the Federal Aviation Administration (FAA) as it relates to the certification and continued airworthiness of aircraft and its operation in general, business, and commercial aviation environments. Emphasis on the privileges and limitations of certificated personnel who maintain aircraft systems in the context of the FAA regulations. Includes practical applications of aircraft weight and balance, effective completion of maintenance record entries, accurate use of graphs and charts to determine critical performance values, and the servicing, starting, ground operations, and security of aircraft. Students demonstrate the ability to read, comprehend, and apply information contained in FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material.

Note

Two hours lecture

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

AVM 103 - Intro to Aircraft Materials and Tooling Standards Laboratory**Credits 1**

A laboratory course to supplement the material of AVM 101.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 101

Typically Offered

Fall, Summer

AVM 111 - Basic Aircraft Electricity**Credits 4**

A basic concept of DC/AC circuits, with basic laws relating to the following: measuring voltage, current, resistance, continuity and leakage; relationship of voltage, current and resistance in electrical circuits; reading and interpretation of electrical circuit diagrams; electrical devices and inspection and servicing of batteries. Introduction to digital numbering systems and digital logic functions.

Note

Three hours lecture and two hour lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 112 - Aircraft Welding**Credits 2**

Theory and skill development in aircraft welding processes. Exercises in gas welding processes as applied to ferrous and nonferrous materials. Oxygen/acetylene, inert gas, and resistance welding processes are to be studied.

Note

One hour recitation and three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

AVM 121 - Aircraft Drawings**Credits 2**

Students learn how to read, understand, and interpret aircraft drawings commonly found in the aviation maintenance industry. Recognition and identification of drawing lines and symbols, and the meaning of these is covered.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

AVM 131 - Aircraft Standards**Credits 4**

A survey of the organization of the Federal Aviation Administration. Emphasis will be placed on regulations, standards, specifications, procedures and the practice of using charts, graphs and drawings. Also included are the introduction to air transport maintenance procedures, weight and balance procedures, aircraft ground operations and the introduction to flight training to include several flights.

Note

Flight lab fees required.

Two hours lecture and six hours of lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 132 - Aircraft Fluid Power**Credits 3**

A study of basic fluid mechanics as it applies to practical applications in aircraft systems. Compressible and incompressible fluid systems will be studied.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 141 - Aircraft Science**Credits 3**

This is a study of basic physics as required by aircraft technicians and defined by FAR 147. Use and understand the principles of simple machines, sound, fluid, and heat dynamics, basic aerodynamics, aircraft structures, and theory of flight.

Note

Three hours recitation and two hours of lab per week.

Repeat for Credit

N

Requisites

Corequisite: Math 100

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 142 - Airframe Systems**Credits 4**

A study of the airframe systems and components to include: pressurization, heating and cooling, and structural device.

Note

Two hours lecture and six hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 151 - Aviation Maintenance Fundamentals

Credits 3

This course is designed to permit the student to learn and practice those skills and techniques essential to the career development of the aviation maintenance technician. The subjects included are: shop safety, aircraft general familiarization, fluid lines and fittings, hand tools and measuring devices, aircraft hardware, cleaning and corrosion control, aircraft metals, inspection fundamentals, ground operation and servicing, and support equipment.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 152 - Airframe Structures and Repair

Credits 5

A study of materials commonly used in airframe structures and the associated study of making structural repairs according to recommended procedures. Skills in sheet

metal are stressed.

Note

Three hours recitation and six hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 162 - Airframe Electrical Systems

Credits 4

An advanced study of DC/AC circuits law relating to circuit analysis and a detailed study of measuring instruments. Advanced study of relays, switches, alternators, and other devices encountered in circuit analysis, troubleshooting, and repair. Theory of operation and fault isolation on solid-state devices in aircraft circuitry. Inspection of aircraft electrical systems, including wire inspections and the types of repairs allowed, using appropriate technical manuals.

Note

Two hours lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111 or ECET 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 201 - Aircraft Metallic Primary Structures

Credits 3

A study of aircraft metal primary structures and materials

commonly used in the design and construction of airframes including fuselages, wings, and control surfaces. Students gain theoretical knowledge and practical experience associated with the structural properties of materials used in the manufacturing process as well as the methods used to fabricate and repair those structures. Students practice structural metal repairs according to FAA approved data and manufacturer's recommended procedures. Skills in aluminum sheet metal fabrication and repairs are stressed.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 101 and AVM 103 or MET 121.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 203 - Aircraft Environmental and Fire Protection Systems**Credits 2**

An in-depth study in small and large air vehicle environmental and fire detection and extinguishing systems. Emphasis on cabin pressurization and temperature climate control, supplemental oxygen, airframe and propulsion fire detection and extinguishing systems, crew visibility enhancement, and air toxicity detection. Students gain extensive practical experiences related to system design, operation, inspection, maintenance methodology, and fault analysis for both airframe and powerplant systems using manufacturer's technical instructions.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 204 - Aircraft Environmental and Fire Protection Systems Laboratory**Credits 1**

A laboratory course to supplement the material of AVM 203.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 203

Typically Offered

Spring

AVM 205 - Aircraft Landing Gear and Fluid Power Systems**Credits 3**

A study of the design and application of compressible and incompressible fluid power systems used in both simple and complex aircraft flight control, auxiliary, emergency, and landing gear systems. Emphasis on landing gear and deceleration systems to include components, structures, operation, and fault analysis of shock struts, position and warning, single and multiple disk brakes, anti-skid, wheel assemblies, retraction and extension systems and methods of emergency landing gear extension. Topics include landing gear door operation and sequencing. Students practice inspection, servicing, repair and troubleshooting of key fluid power and landing gear systems necessary to ensure continued airworthiness of these systems.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 207 - Aircraft Electrical Systems

Credits 3

A review and advanced study of DC/AC circuits, and laws relating to circuit analysis and a detailed study of measuring instruments applied to aircraft. Study of relays, switches, alternators, and other devices encountered in circuit analysis, troubleshooting, and repair. Theory of operation and fault isolation on solid-state devices in aircraft circuitry. Inspection of aircraft electrical systems, including wire inspections and the types of repairs allowed using appropriate technical manuals. A study of battery, magneto high and low tension ignition systems, including turbine igniters. Also a study of powerplant starting and charging systems and related components. Emphasis on effective fault diagnostics, repair, and timing of aircraft ignition systems.

Note

Two hours of lecture and 4 hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or AVM 111.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 214 - Introduction to Aircraft Propulsion Theory, Design and Systems

Credits 3

A broad introductory study in the theory of operation of heat engines utilizing principles of the Otto and Brayton cycles found in aircraft reciprocating and gas turbine powerplants. Students gain a solid understanding of the basic principles of the construction, design, lubrication, cooling, and exhaust systems, including maintenance practices of reciprocating and gas turbine powerplants installed in aircraft. Thrust reverser operation of gas turbine engines is also included. The course has a practical component that includes the inspection, fault analysis, servicing and repair of key engines systems covered in the course.

Note

Three hours lecture and three hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 216 - Aircraft Propulsion Drive Systems

Credits 3

A detailed study of aircraft propulsion drive systems that convert engine power to thrust necessary for sustained flight. Drive systems include propellers, and rotor-blades found on small, medium, and large fixed, and rotary-wing aircraft. Emphasis on fixed and controllable-pitch propellers applications as well as rotor-blades, and rotor-hubs assemblies found on helicopters. Topics include theory of operation, dynamic and static balancing, vibration analysis, design characteristics, materials, and maintenance practices. Students practice inspection, servicing, balance, maintenance and repair of propeller and rotor systems.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVM 231 - Aircraft Finish and Fabrication

Credits 3

This course is designed to acquaint the student with the wood and fabric coverings and procedures used on aircraft, and methods used in preparation for and application of paint finishes to aircraft surfaces.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 241 - Navigational Aids and Communication Systems

Credits 3

A survey study of the aids to navigation and communications used in light and intermediate class aircraft. Operation and installation of the various types of equipment will be stressed.

Note

Two hour lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111 or ECET 100.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 261 - Aircraft Inspection and Assembly

Credits 5

A study of assembly and manufacturing procedures and inspection of aircraft components. This course also covers in detail annual and 100-hour inspections.

Note

Three hours recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 121, 131.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 301 - Advanced Reciprocating Powerplant Technology

Credits 3

A study in the theory, operation, construction, design, and maintenance of reciprocating powerplants installed in aircraft. Topics include the principles of the Otto cycle, reciprocating powerplant systems, and emerging trends in the design and application of reciprocating engines, including aviation diesel engines. Practical experiences include engine removal, installation, and troubleshooting to an airworthy standard, with an emphasis on disassembly and inspection of modern reciprocating engines found in single and twin-engine aircraft using visual, dimensional, and non-destructive techniques.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

None

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 303 - Introduction to Aircraft Composite Structures

Credits 3

Introduces composite materials used in the design and production of legacy and modern aircraft. Topics include material characteristics, fabrication, and inspection; repair of non-metallic primary and secondary structures and materials using manufacturers' instructions. Materials

include fabric, wood, fiberglass, plastics, honeycomb, and others. Students practice the selection, installation, application of protective coatings, and removal of special fasteners used in these structures. Laboratory exercises emphasize the fabrication and inspection of modern composite structures.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 304 - Aircraft Fuel Management and Metering Systems

Credits 3

A comprehensive study of airframe and propulsion engine fuel systems associated with fuel storage, management, transfer and metering as applied to both reciprocating and turbine powered aircraft. Lecture topics include systems operation, maintenance methods, procedures and safety precautions associated with aircraft fueling and defueling for over-the-wing and pressure fueling systems. Fuel quantity, pressure and temperature indicating and warning systems, fuel dump, and detail reciprocating and turbine engine fuel metering systems including carburetor overhaul, electronic engine fuel controls (EEC and FADEC) are covered. Students practice the inspection, check, service, troubleshooting and repair of the various fuel systems found on board the aircraft to a level that assures continued airworthiness and safety.

Note

Two hours lecture and four hours of lab a week.

Repeat for Credit

N

Requisites

None

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 305 - Aircraft Avionics and Instrument Systems

Credits 3

A study of flight instrument systems and navigation/communication electronic aids installed on aircraft. The course includes both lecture and practical applications of these systems to include operation, inspection, fault analysis and repair. The student will be exposed to mechanical and electronic airframe and powerplant indication equipment including flight instrument systems for heading, speed, altitude, temperature, pressure, RPM, and position indicating. The course includes flight management systems, and GPWS, TAWS, laser gyro and advanced Comm/Nav applications. Emphasis will be placed on NAV/COMM systems found in modern aircraft and associated antenna applications and installation methods. Pitot/Static instruments and systems are also discussed. Students practice inspection, service, fault analysis, installation and repair of these systems

Note

Three hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or AVM 111.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 306 - Rotary and Fixed Wing Aircraft Design and Assembly

Credits 3

A detailed study of the purpose of fixed-wing and rotary-wing aircraft designs and aerodynamic characteristics, their construction methods and assembly procedures. The course

provides an insight critical maintenance tasks performed that impact the safe operation of the aircraft as well as exposure to the manufacture and assembly of aircraft. Students practice the rigging, assembly, jacking, weighing, and balancing of aircraft and flight control surfaces according to manufacturer's technical manuals; and making accurate record entries for tasks performed in accordance with FARs.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 101, AVM 121 or MET 111.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 312 - Aircraft Propellers**Credits 2**

A study of the use, maintenance, and inspection of propellers and their related control systems.

Note

One hour recitation and three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVM 321 - Powerplant Fundamentals**Credits 4**

A study of the principles of operation, design features, and operating characteristics of reciprocating aircraft engines. Includes overhaul inspection procedures on current horizontal opposed and radial engines.

Note

Three hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 131.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

AVM 322 - Powerplant Operation and Troubleshooting**Credits 3**

Experience in installation, operation, and removal of aircraft engines. Engine analysis and diagnosis of malfunctions, including methods of remedy, are performed on airworthy engines.

Note

Two hours recitation and four hours lab a week.

Repeat for Credit

N

Requisites

Corequisites: AVM 402 and AVM 301,

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 332 - Gas Turbine Powerplant**Credits 5**

Advanced study of the fundamentals of gas turbine powerplants including operation, studies of supporting systems and inspection methods are fundamental to this course.

Note

Two hours recitation and nine hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 321.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 342 - Powerplant Induction and Fuel Systems**Credits 4**

A study of aircraft induction and fuel metering systems including fuels, carburetors, fuel injection systems, superchargers, and other induction system components used to ensure a dependable and accurate fuel supply at any flight configuration and attitude.

Note

Two hours recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 321.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 351 - Powerplant Ignition and Electrical Systems**Credits 3**

A study of battery, magneto high and low tension ignition systems, including turbine igniters for today's aircraft. Also

a study of powerplant starting and charging systems and related components. Emphasis will be placed on troubleshooting, repair, and timing of aircraft ignition systems.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 352 - Powerplant Overhaul**Credits 3**

Practical experience in overhauling reciprocating engines. Engines are assembled and operationally checked in lab.

Note

One hour lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 321.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 370 - Advanced Aircraft Avionics and Instrument Systems**Credits 3**

Advanced study of flight instrument systems and navigation/communication electronic aids installed on large

Corporate and Transport Category aircraft. The course includes both lecture and practical applications of these systems to include operation, inspection, fault analysis and repair. The course includes flight management systems, and GPWS, TAWS, laser gyro and advanced Comm/Nav applications.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 305.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVM 390 - Problems in Aviation

Credits 1-18

Provides the student the opportunity for advanced study in a specific topic area or to apply aviation education to the improvement of skills previously learned.

Note

Topics are selected jointly by the student and the instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

AVM 401 - Aircraft Airworthiness, Conformity, and Quality Assurance

Credits 3

A capstone course requiring students to tie all previous coursework associated with airframe and powerplant systems maintenance and operations together to perform an effective and safe inspection of the entire aircraft in compliance with manufacturer's recommendations and FAR requirements. This course emphasizes practical

experiences necessary to inspect the aircraft for continued airworthiness. Aircraft is weighed and conformity inspections are performed. All work and inspection status is recorded and documented using approved maintenance entries. Part 145 operational requirements are included in the course experience and work team scheduling and coordination is emphasized.

Note

Three hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor consent.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 402 - Gas Turbine Powerplant Technology

Credits 3

A study in the theory, operation, construction, design, and maintenance of gas turbine powerplants installed in aircraft. Topics include jet propulsion history and development, the Brayton cycle, turbine engine systems, thrust reverser operations, and emerging trends in the design and application of gas turbine engines. Practical experiences include engine removal, installation, engine test cell operations, and troubleshooting to an airworthy standard with an emphasis on disassembly and inspection of small turboprop/turboshaft engines commonly found on turbine twin-engine aircraft and helicopters.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

None

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 403 - Advanced Aircraft Avionics and Instrument Systems**Credits 2**

Advanced study of flight instrument systems and navigation/communication electronic aids installed on large Corporate and Transport Category aircraft. The course includes both lecture and practical applications of these systems to include operation, inspection, fault analysis and repair. The course includes flight management systems, and GPWS, TAWS, laser gyro and advanced Comm/Nav applications.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 305.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

AVM 497 - Aviation Maintenance Capstone**Credits 3**

A capstone course designed to help prepare the students for industry-required credentials. It will be comprehensive in nature to the rest of the curriculum. Subjects will be incorporated from the rest of the applicable curriculum and the ACS standards. Students shall research and present a topic as determined by the instructor.

Note

Two hours lecture, three hours lab a week

Repeat for Credit

N

Requisites

Corequisite: AVM 301 and AVM 402

Typically Offered

Fall, Spring, Summer

AVMR 220 - Aviation Maintenance Review/General**Credits 4**

The general review course is designed for those individuals who have met the Federal Aviation Administration's eligibility requirements under FAR 65.77. The review conforms to the three levels of training set forth by the FAA. Three hours rec. and three hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

AVMR 230 - Aviation Maintenance Review/Airframe**Credits 4**

The airframe review course is designed for those individuals who have met the Federal Aviation Administration's eligibility requirements under FAR 65.77. The review conforms to the three levels of training set forth by the FAA.

Repeat for Credit

N

Typically Offered

Fall, Spring

AVMR 250 - Aviation Maintenance Review/Powerplant**Credits 4**

The powerplant review course is designed for those individuals who have met the Federal Aviation Administration's eligibility requirements under FAR 65.77. The review conforms to the three levels of training set forth by the FAA

Repeat for Credit

N

Typically Offered

Fall, Spring

AVT 100 - Introduction to Aviation**Credits 3**

This course examines the history of aviation and a look at the future. Students discuss the attributes of an aviation professional, careers, career planning, and pilot certification. Students consider historical events and their relationship to current aviation aspects. The interdependency and synergy in the development of military aircraft, the space program, as well as the growth of commercial and general aviation is discussed. Students use the Internet for various research projects concerning the past, present, and future of aviation.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AVT 120 - Aeronautical Programs Flight Familiarization**Credits 1**

An introduction to the fundamentals of flight in various types and categories of aircraft. A familiarization of piloting skills and knowledge, a demonstration of aircraft capabilities, and the National Airspace System.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 111.

Typically Offered

Fall, Spring, Summer

AVT 240 - Introduction to Air Traffic Control**Credits 3**

An introductory air traffic control (ATC) course that focuses on Terminal, Enroute, and FSS ATC procedures. The course examines the role of an air traffic controller at the various operational positions throughout the ATC system. The course gives an overview of the current U.S. National Airspace System as it relates to ATC procedures. In addition, the course looks at the use of future technologies and how they enhance the ATC system. Off-campus trips contribute to experiential learning.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVT 242 - Aviation Meteorology**Credits 3**

Basic aviation-related meteorology concepts through the study of atmospheric elements and how they generally affect the weather: introduction to the subject, water in the atmosphere, variables which cause local weather changes, specific aviation-associated hazards, understanding meteorological reports and forecasts, meteorological techniques used in predicting weather patterns.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

AVT 243 - Aircraft Electrical, Navigational, and Communication Systems

Credits 3

Provides students the basic knowledge of aircraft electrical systems, including navigation, communications, instruments, and power systems.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111.

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

AVT 250 - Safety and Security of Airport Ground Operations**Credits 3**

This course discusses general aviation airport ground operations, particularly from the mechanic, pilot, and ramp worker perspective. Focus will be on increasing awareness of airport operations. Attention will be given to improving airport safety by creating an enhanced awareness of rules, policies, procedures, and potential hazards that affect all individuals working in and around the airport ground operations environment. Some topics included are: aircraft marshalling procedures, airfield security issues, ground vehicle operations, and security and accident/incident response reporting.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AVT 315 - Advanced Avionics**Credits 3**

This course covers the latest developments and trends in navigation and communication systems. Topics include Future Aviation Navigation Systems (FANS), fiber optics,

enhanced vision, ADS-B, the FAA's NextGen, as well as other advancements in avionics.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 241 or AVM 242.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 316 - AET and FCC Training**Credits 1**

This course is a self-paced lab that allows students to study for their Aviation Electronics Technician certificate and their Federal Communication Commission license in Elements 1, 3 and 8.

Note

Two hours lab a week.

This is a credit/no-credit course and will not affect the student's GPA.

Repeat for Credit

N

Typically Offered

Fall, Spring

AVT 317 - Composites I**Credits 3**

Introduction to composite materials used in a broad range of industries with an emphasis on aero structure. Topics include defining a composite, understanding the materials, safety aspects, and shop layouts that are used to produce composite parts. An overview of the construction methods, understanding how to inspect components for damage, and procedures to perform the actual repair used in industry today. Students develop an understanding of how to design/source industrial composite fasteners and install into the composite structure and the science of coatings for the

protection of both the composite materials as well as metallic components adjacent to composites. The labs support the lectures with projects designed to give the student hands on application.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 318 - Composites I Laboratory

Credits 2

An optional laboratory course introducing the use of equipment and materials utilized in the advanced composites industry.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVT 317.

Typically Offered

Fall

AVT 327 - Avionics Repair

Credits 3

An in depth overview of aircraft wiring. Procedures in terminating, repairing, testing and troubleshooting of aircraft wiring, as well as aging wiring inspections.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 330 - Avionics Troubleshooting

Credits 4

An in-depth troubleshooting project, requiring critical thinking to analyze the problem and provide the correct repairs.

Note

One hour lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVT 327.

Typically Offered

Spring-Even Years

AVT 340 - Human Factors in Aviation

Credits 3

Explores the physical environment and physiology limitations imposed on the aviation professional. Health, fatigue, human behavior and errors, communication, team building, leadership, situation awareness, crew resource management, judgment, and aeronautical decision making are studied to achieve safe and efficient operation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111 or AVT 100, or junior standing.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

AVT 360 - Airport Law

Credits 3

A study of how the U.S. regulatory and legal systems work in relation to airport management. This course emphasizes contract law related to the Federal Aviation Administration Airport covenants and restrictions, Federal Aviation Regulation compliance and airport operator liability.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 361 - Airport Environmental Studies

Credits 3

Introduction to responsibilities, liabilities and public relations when dealing with environmental issues in day-to-day airport operations. Includes strategies for addressing airport and aircraft noise, wildlife hazard mitigation, compatible land use, wetlands, historical properties and impacts of construction. Federal regulations and enforcement are studied with emphasis on the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Pollution Prevention ACT, and National Historic Preservation Act as they apply to airports.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100 and ENGL 200

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 380 - Airport Operations

Credits 3

A study of the daily operations of an airfield in compliance with regulatory agencies, understanding the role of liaison to airport staff regarding operations, development of department budgets, knowledge of effective supervisory

practices and principles, ability to plan and carry out airport operations and development programs under airport management matrix.

Note

Three hours lecture and three hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200

Typically Offered

Spring

AVT 386 - Aerodynamics

Credits 3

This course covers incompressible flow theory and wing theory as well as calculations of stall speed, drag, and basic performance criteria. This course also examines configuration changes, high and low speed conditions, and special flight operations. Stability and control, weight and balance, and operational data are also examined. Aerodynamic performance of aircraft powered by reciprocating, turboprop, and jet turbine engines are considered. The student will be introduced to aircraft design and high-speed aerodynamics.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100; and PPIL 111 or AVM 141.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVT 389 - Problems in Aviation

Credits 1-18

Provides the student an opportunity to apply their aviation education to the improvement of skills previously learned as designated by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AVT 400 - Composites II**Credits 3**

Continued study of the mechanical properties of several composite materials along with strengths and limitations. Topics include gelcoats for tooling and part production, layup of semi complex composite parts using wet layup and vacuum bagging techniques, simple mold development, construction, and repair. Additionally, students are introduced to compression composite molding compounds and tooling required for production, and composite facility layout and outfitting. The lab will support the lectures with projects designed to give the student the hands on application.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 303 or AVT 317.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVT 405 - Introduction to Non-destructive Testing**Credits 2**

Introduction to non-destructive testing (NDT) and inspection methods commonly used to detect material anomalies in diverse industries. NDT methods used in aviation/mechanical structures and components is emphasized. Students gain practice using Visual, x-ray (radiographic, magnetic particle, ultra-sound, eddy current and dye penetrant), NDT methods and techniques on test samples. Serviceability of the components is determined using approved manufacturers service limits.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 121, or MET 231 and MET 245.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVT 410 - Aviation Maintenance Management**Credits 3**

Provides students with an understanding of general aviation and commercial aviation maintenance programs. Includes regulations, maintenance levels, technical publications, quality assurance, inspections, human factors, and unions. It also provides an understanding of the difficulties in managing a line operation. Case studies of maintenance scenarios are used.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

AVT 417 - Composites III**Credits 3**

Continued study of the highly complex composite parts and associated molding technologies used to produce these parts. Topics include the construction of resin infusion parts and mold construction, reusable vacuum bagging materials, application of preimpregnated materials and tooling designed to withstand oven cure cycles, discussion of advanced materials and techniques new to the industry. The lab will support the lectures with projects designed to give the student the hands on application in a relative environment.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVT 400.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVT 420 - Aviation Accident Investigation

Credits 3

This course is designed to provide a general understanding of the methods and procedures used in aviation accident investigation. Students in this course will learn methods used to gather and analyze facts of accidents as well as determine probable cause and contributing factors. Procedures and techniques used to determine accident causes will also be analyzed. Historical accident reports from National Transportation Safety Board (NTSB) and other organizations will be examined.

Repeat for Credit

N

Requisites

Corequisite: AVT 340 and junior standing.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVT 429 - Avionics Maintenance

Credits 3

Provides the basic knowledge to repair and install pitot-static systems. Practical experience in troubleshooting and using maintenance test equipment.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 305.

Typically Offered

Fall-Odd Years

K-State 8

Empirical and Quantitative Reasoning

AVT 430 - Advanced Avionics Installation

Credits 3

Provides practical knowledge of avionics suite installation, to include Garmin. Students will gain additional experience in operational checks, troubleshooting and software loading on the Garmin G1000/900X. This course is an individual semester long project.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVT 327.

Typically Offered

Spring-Odd Years

K-State 8

Empirical and Quantitative Reasoning

AVT 435 - Air Transportation

Credits 3

This interactive course examines the development of the United States air transportation system, current issues, and the competitive strategies of past and present airline executives; examines the many attributes of starting and operating a successful airline in a competitive market; and explores the role of airport operations and the commercial and corporate aircraft that challenge the air transportation system.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Summer

AVT 440 - Air Carrier Operations**Credits 3**

A study of Federal Aviation Regulations that influence air carrier and commercial operators. Students will gain an appreciation of the variety of regulatory issues involved in air carrier operations such as certification, training, and operational safety and security requirements. Students will also gather the background information necessary to correlate and apply relevant regulations to daily aviation operations. The course focuses on FAR Part 61, 91, 119, 121, and 135.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111 or AVT 100, and junior standing.

Typically Offered

Spring

AVT 442 - Advanced Air Traffic Control**Credits 3**

An in-depth study of tower, TRACON, and enroute procedures. Also examines the FAA's future air navigation system concept.

Repeat for Credit

N

Requisites

Prerequisite: AVT 240, PPIL 112.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

AVT 445 - Aviation Law**Credits 3**

A study of how the U.S. regulatory and legal systems work in relation to aviation activities. It is designed to help those in the aviation industry understand their rights, liabilities, and responsibilities and avoid common legal pitfalls. Emphasis will also be placed on aircraft ownership, registration, and insurance.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 446 - Corporate and Business Aviation Management**Credits 3**

A study of the history of corporate and business aviation, the regulation of the industry, and the operation and management of corporate and business flight departments. Students will receive an overview of the social, economic, and political effects of business aviation. Aircraft selection and utilization, maintenance responsibilities, fiscal considerations, fractional ownership, and passenger and crew safety and security measures will also be studied.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

AVT 448 - Aviation Legislation**Credits 3**

Students are required to take part in the University Aviation Association's Annual Seminar on Establishing Aviation Policy during the first full week of January in Washington, D.C. Students prepare for the seminar with required reading assignments.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

AVT 450 - Aviation Safety Management**Credits 3**

A course designed to assist the student to develop an attitude and philosophy for accident prevention. The course includes ideal and practical, personal and organizational safety procedures and goals; safety philosophies; aircraft accident reports; human factors; principles of accident investigation; accident prevention program and accident statistics; current events; NTSB special studies. The safety program is analyzed from the theoretical and philosophic points of view. A safety program is developed with an examination of safety concepts, the human elements of accidents, managing a safety office in an organization, and current events.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 451 - System Safety**Credits 3**

This course is designed to provide an understanding of the system safety discipline. Students will learn how the system safety process is used in accident prevention and examine its role in management. Students will also examine various aircraft systems for overall safety of operation.

Repeat for Credit

N

Requisites

Prerequisite: AVT 450.

Typically Offered

Spring-Odd Years

K-State 8

Empirical and Quantitative Reasoning

AVT 455 - Current Trends and Issues in Aviation**Credits 3**

This course explores current trends and issues in the aviation industry. Emphasis is placed on discussing current issues that are impacting the world aviation marketplace. Students will address these issues and trends from the standpoint of application to their career, relevance to the economic viability of the industry, and the impact such trends place on aircraft operators and manufacturers.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

AVT 461 - Airport Management**Credits 3**

An in depth study of both landside and airside airport business management, utilizing the American Association of Airport Executives' Body of Knowledge modules. Includes a study of the role of the airport in community development.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing

Typically Offered
Fall

AVT 462 - Airport Planning

Credits 4

A study of airport planning and practices to understand FAR Regulation part 139 airport design standard as well as a study of both landside and airside planning issues utilizing the American Association of Airport Executive's Body of Knowledge modules.

Note
Studio format incorporating lecture and lab elements.

Repeat for Credit
N

Requisites
Prerequisite: AVT 461.

Typically Offered
Fall

AVT 464 - Airport Certified Manager

Credits 1

The study and preparation for various forms of certification within the AAAE realm including the opportunity to study and take the Airport Certified Employee (ACE) exams and the Certified Member (CM) exam.

Note
One hour lab a week.

Repeat for Credit
N

Requisites
Prerequisite: AVT 250, AVT 360, AVT 462.

Typically Offered
Spring

AVT 480 - Airport Global Networks

Credits 3

An introduction to the economic, political, and civic challenges that impact the profitability of airports

worldwide and the steps being taken by the airport industry and international governing bodies to address them.

Repeat for Credit
N

Requisites
Prerequisite: AVT 380, Junior Standing, and ENGL 302

Typically Offered
Spring

K-State 8
Global Issues and Perspectives

AVT 482 - Aviation Ethics and Leadership

Credits 3

Students acquire an understanding of core leadership values demanded by the aviation industry, understand leadership challenges facing the aviation industry, and identify personal leadership styles and their most effective implementation within industry.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Ethical Reasoning and Responsibility

AVT 485 - Helicopter Maintenance

Credits 3

An advanced study of the major components of rotary-winged aircraft to include airframe, rotor, transmission and engine components of turbine and reciprocating engine helicopters. Also includes a detailed study and validation of all Federal Aviation Administration required documentation related to maintenance, historical records, and inspection of components.

Note
Two hours lecture and 4 hours lab per week.

Repeat for Credit
N

Requisites

Prerequisite: AVM 111, 121, 131, 141, 151 or consent of instructor.

Typically Offered

Summer

K-State 8

Ethical Reasoning and Responsibility

AVT 497 - Senior Capstone

Credits 3

This culminating experience is a sustained occasion when students will put into independent practice the intellectual, creative, and expressive skills/knowledge they have cultivated in their undergraduate curriculum. In this course students integrate discipline-specific knowledge in addition to communication and inquiry methods to solve problems and communicate mastery of their respective area of interest.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor consent.

Typically Offered

Fall, Spring

AVT 498 - Research Project

Credits 1-9

Research, scholarly and creative activities in the aviation field. Working with faculty on a current research project.

Note

The specific course content varies in accordance with current projects.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered

Fall, Spring, Summer

AVT 560 - Airport Design

Credits 4

Student teams with faculty and industry advisors prepare to enter their work in the Airport Cooperative Research Program's (ACRP) national design competition for universities addressing issues relating to airports and the National Airspace System. The competition focuses on design solutions in the following broad areas: Airport Operation and Maintenance, Runway Safety/Runway Incursions/Runway Excursions, Airport Environmental Interactions, and Airport Management and Planning.

Repeat for Credit

N

Requisites

Prerequisite: AVT 360, AVT 361, and AVT 462.

Typically Offered

Spring

AVT 611 - Aircraft Regulation and Certification

Credits 3

Provides an overview of the FAA certification process relating how the certification process contributes to a safe National Airspace System. Application of relevant Federal Aviation Regulations. Covers both aircraft type and production certification to include airframe, engine, and component certification. Covers the history of aviation regulation and corresponding relationship to aerospace safety.

Repeat for Credit

N

Typically Offered

Fall

AVT 703 - Project Management for Aerospace Professionals

Credits 3

This course focuses on applied project management, methodology, tools, and techniques. Topics include career aspects of project management; business factors affecting the project; project organization, planning, execution, and communications; the project life cycle; risk analysis; and best practices in project management. Course will include specific applications in the aviation/aerospace sector.

Repeat for Credit

N

Typically Offered

Fall

AVT 707 - Research Methods**Credits 3**

Provides students with the skills necessary to perform graduate-level research in the field of technology. Course focuses primarily on quantitative research; however, qualitative and mixed-method research methods are also covered. Statistical Research Software applications are also included.

Repeat for Credit

N

Typically Offered

On sufficient demand

AVT 722 - Aircraft Type Certification**Credits 3**

A detailed examination of the type certification process leading to the issuance of a type certificate, and changes to a type certificate through an amended type certificate, supplemental type certificate, or amended supplemental type certificate. Covers FAA and international certification standards and regulating bodies as well as relevant performance standards to include role of FAA Advisory Circulars, DO 160, 178, and 254, SAE, ASTM, and other industry standards in the certification process. Presents the continuing airworthiness process, including the issuance of airworthiness directives, and the relationship of manufacturer service bulletins, and service letters. Brief discussion on type validation process. Discuss the importance of developing processes to manage all of the data associated with the certification process.

Repeat for Credit

N

Requisites

Prerequisite: AVT 611

Typically Offered

Fall, Spring, Summer

AVT 734 - Advanced Aircraft Certification**Credits 3**

A detailed examination of the process to determine applicable regulations for changed aeronautical products, certification project planning elements not covered by AVT 722, application of selected means and methods of compliance, delegation systems, and certification validation processes for export of aeronautical products.

Note

Name was changed to Advanced Aircraft Certification.
<https://kstate.curriculog.com/proposal:7708/form>

Repeat for Credit

N

Requisites

Prerequisite: AVT 722

Typically Offered

Fall, Spring, Summer

AVT 744 - Aviation Human Factors Analysis and Design**Credits 3**

An in-depth exploration of the history of air safety as related to human error and how system safety has been greatly enhanced by the incorporation of the fundamentals of human factors in design. Students will understand and articulate the major advances in Human Factors research over the past 40 years and identify knowledge gaps yet to be filled.

Repeat for Credit

N

Requisites

Prerequisite: AVT 611.

Typically Offered

On sufficient demand

AVT 751 - Aerospace Policy**Credits 3**

Students will understand State and Federal legislative processes and appreciate how ideas become law. This course will specifically include a study of the concepts of

advocacy, building coalitions, caucuses, theories of statutory interpretation, and drafting legislation. Where possible the course will include meeting with legislators. Students will also understand how to attain, track, and influence Federal legislation affecting the aviation/aerospace industry.

Repeat for Credit
N

Typically Offered
On sufficient demand

AVT 771 - Leadership in the Aerospace Sector

Credits 3

An exploration of the theories of leadership and critical issues facing aerospace sector leadership in the coming decades. Concepts of resilience, contingencies, communication, collaboration, ethics, strategic planning, failure/recovery, and cultural transformation will be explored. At the end of this course students will understand and appreciate the differences between effective and ineffective leaders.

Repeat for Credit
N

Typically Offered
On sufficient demand

AVT 790 - Aerospace Topics

Credits 3

Variable content as determined by the instructor to address emerging issues and challenges related to the aviation industry and aerospace safety.

Repeat for Credit
Y

Typically Offered
On sufficient demand

AVT 799 - Advanced Topics in Aeronautics

Credits 3

Advanced topics in Master of Science in Aeronautics.

Repeat for Credit
Y

Requisites
Prerequisite: Instructor consent.

Typically Offered
On sufficient demand

AVT 836 - Master of Science in Aeronautics Capstone Project

Credits 3

An applied project focused on either aircraft certification or aerospace leadership/policy. This course is designed to improve the demonstration of professional knowledge in the student's technical discipline.

Repeat for Credit
N

Requisites
Prerequisite: AVT 611, AVT 707, COT 701, and advisor permission

Typically Offered
Spring

AVT 838 - MSA Thesis

Credits 1-6

Required research for M.S.A. thesis option students.

Repeat for Credit
Y

Requisites
Prerequisites: AVT 611, AVT 707

Typically Offered
On sufficient demand

AVT 841 - Aerospace Safety Management Systems (SMS)

Credits 3

An in-depth analysis of aviation safety across all elements of the industry from manufacturing to training, to airports. The student will understand the impacts and challenges of

balancing operational efficiencies with the maximization of organizational safety. Safety Management Systems (SMS) concepts will be explored, and students will have the opportunity to design a sample SMS program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

BAE 020 - Engineering Assembly

Credits 0

Presentation of professional problems and practices by students, faculty, and professionals associated with the career of biological and agricultural engineering.

Note

One hour lecture a month.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BAE 101 - Introduction to Biological and Agricultural Engineering and Technology

Credits 1

Introduction to discipline, department, university, and profession. Exploration of career option. Gain skills through application-oriented problem solving.

Note

One hour recitation a week.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

ATM 101

BAE 131 - Biological Systems Engineering Project I

Credits 1

Team-oriented design project, with an emphasis on applying computer tools to problem solving in biological systems engineering.

Note

Three hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: MATH 220.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

BAE 231 - Biological Systems Engineering Project II

Credits 1

Team-design project presented by biological and agricultural engineers from industry and student engineering design teams with an emphasis on problem definition, information search, idea generation, concept development, and written oral communication.

Note

Three hour lab a week

Repeat for Credit

N

Requisites

Prerequisite: BAE 131.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

BAE 250 - Solid Modeling

Credits 1

Basics of solid modeling with the PTC software Pro Engineer/Creo. Modeling parts, creating assemblies, and

creating drawing based on modeled parts and assemblies.

Note

Three hour lab/week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ME 212.

Typically Offered

Spring

BAE 331 - Professional Practice for Biological Systems Engineering Design

Credits 1

A preparatory course for BSE Senior Design class. Topics will include professionalism, project management, intellectual property, organizational behavior and ethics. Students will explore potential design project ideas, build design teams, and chose a project to complete for senior design in the following semester.

Note

One hour lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BAE 231.

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

BAE 345 - Properties of Biological Materials

Credits 2

Characterization and application of material properties (physical, chemical, hygroscopic, rheological, and thermal) that affect the engineering design and analysis of biological processes and systems.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 210 or CHM 220.

Typically Offered

Spring

BAE 346 - Properties of Biological Materials Laboratory

Credits 1

Laboratory evaluation of biological material properties (physical, chemical, rheological, and thermal) that affect biological processes and systems, data analysis and interpretation

Note

Required for all biological systems engineering majors.

Repeat for Credit

N

Requisites

Prerequisite: Must be concurrently enrolled in BAE 345.

Typically Offered

Spring

BAE 350 - Off Road Machinery Systems

Credits 2

Basic power and energy concepts. Machinery systems for tillage, planting, and harvesting crops. Impact of these systems on the environment and natural resources.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 210.

Typically Offered

Fall

BAE 351 - Machinery Systems Lab

Credits 1

Basic power and energy concepts. Machinery systems for tillage, planting, and harvesting crops. Impact of these systems on the environment and natural resources.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Must be taken concurrent with BAE 350.

Typically Offered

Fall

BAE 445 - Biological Engineering Fundamentals**Credits 3**

Integration of biochemistry, microbiology, and biology principles into engineering with topics such as chemistry of biomolecules, data analysis and presentation, material and energy balances for reactive and non-reactive processes, biochemical reactions, and application of biological engineering principles in industrial processes.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and BAE 345 or CE 533 or CHE 354 and CHE 355.

Typically Offered

Fall

BAE 447 - Cell Culture Technology Laboratory**Credits 2**

Cell culture laboratory fundamentals including media preparation and aseptic techniques; bioreactor assembly, sterilization, and operation; expansion of cell cultures, cell counting and viability; expression and measurement of target proteins; cell harvesting techniques; analytical

techniques; and cGMP documentation.

Note

1 h recitation and 2 h lab per week

Repeat for Credit

N

Requisites

Prerequisite or corequisite: BAE 445 or ATM 345

Typically Offered

Fall

BAE 448 - Separation Technologies Laboratory**Credits 2**

Hands on experience of separations technologies such as cell lysis and extraction, precipitation, centrifugation, filtration, and chromatography; analytical methods used to assess separations; cGMP documentation

Note

1 hr recitation and 2 hr laboratory per week

Repeat for Credit

N

Requisites

Pre-requisite/corequisite: ATM 445 or BAE 626 or CHE 626

Typically Offered

Spring

BAE 450 - Off Road Machine Power Components**Credits 3**

Engine thermodynamics, fuel and combustion, engine components, engine cycles, engine power transfer and efficiencies, exhaust gas emissions. Mechanical power transfer mechanisms: bearings, belt drives, chain drives, gear drives, shaft drives. Hydraulic power transfer components and systems, fluid mechanics, hydraulic motors.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 213. Not available for credit students with ATM 455.

Typically Offered

Spring

BAE 460 - Computational & Statistical Tools for Engineers**Credits 3**

Application of statistical tools for analyzing engineering data. Practice of introductory to intermediate programming to develop problem-solving techniques for a wide variety of engineering applications.

Note

2 hour lecture and 2 hour studio each week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221 and sophomore standing.

Typically Offered

Fall

BAE 497 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

BAE 499 - Honors Research in Biological Systems Engineering**Credits 1-18**

Individual research problem selected with approval of faculty advisor. Open to students in the college of engineering honors program. A report is presented orally and in writing during the last semester.

Note

Instructor approval.

Repeat for Credit

Y

Typically Offered

Fall

BAE 535 - Structures and Environment Engineering**Credits 3**

Environmental control for agricultural buildings and structures; analysis and design of structural systems and members for agricultural structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ME 513 and CE 333 or CE 530.

Typically Offered

Fall

BAE 536 - Biological Systems Engineering Senior Design I**Credits 3**

Applies and integrates engineering design principles, verbal and written communications, ethics, project management, social aspects, and economics to design a system, component or process which interfaces with agricultural and other biological systems. Emulates professional environment and provides experience in team dynamics and collaboration through the team-based design project.

Note

Two 3-hour labs a week.

Repeat for Credit

N

Requisites

Prerequisite: BAE 331 and one of the following courses as prerequisite or concurrent: ME 533, BAE 545, BAE 560.

Typically Offered

Fall

Crosslisted

ATM 536 - Agricultural Technology Management
Capstone Project

BAE 545 - Biological Process Engineering**Credits 3**

Bioprocess engineering principles with an emphasis on momentum transfer and applications such as fluid flow and pump systems, steady- and unsteady-state heat transfer, psychrometrics and application to drying processes, and biomaterial and bioenergy processes.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 571 or CHE 530

Typically Offered

Fall

BAE 550 - Hydraulics and Mechatronics**Credits 3**

Basic hydraulic, mechatronic, and hybrid drive system concepts and design. Application of these technologies to agriculture, construction, and other off road equipment applications.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 213.

Typically Offered

Fall-Even Years

BAE 560 - Hydrology for Biological Systems**Credits 3**

Components of water cycle including precipitation, infiltration, evapotranspiration. Principles and measures for controlling storm water runoff and soil erosion including hydrology and surface water flow; design of water handling structures for land drainage, flood protection, and irrigation.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ME 571 and either STAT 510 or BAE 460.

Not available for credit for students with CE 550.

Typically Offered

Spring

BAE 582 - Natural Resources/Environmental Sciences Project (NRES)**Credits 3**

A comprehensive project in NRES. Requires integration of information and understanding acquired in NRES secondary major courses. Students must prepare and present written and oral reports.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 415, COMM 105.

Prerequisite or concurrent enrollment: 15 hours of approved courses in NRES secondary major.

Typically Offered

Fall, Spring

Crosslisted

DAS 582 and GENAG 582

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2
Social Sciences

BAE 610 - Problems in Biological Systems Engineering

Credits 1-3

Current and advanced problems in biological systems engineering.

Note

No more than 6 hours can be applied to the degree.
Instructor approval.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

BAE 611 - Particle Technology

Credits 3

Science and behavior of airborne particles or aerosols. Technology and methods for measuring, controlling, and utilizing aerosols in the agricultural and food industries. Specific topics include basic particle mechanics; principles of particle measurement; particle statistics; electrostatic precipitation; condensation; evaporation; dust generation; and filtration.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit
N

Requisites
Prerequisite: BAE 460 or STAT 510, and PHYS 213.

Typically Offered
Spring

BAE 620 - Topics in Biological Systems Engineering

Credits 1-18

Engineering topics for the design, understanding, and/or application of biological systems. Topics announced when

offered.

Repeat for Credit
Y

Requisites
Prerequisite: Approval of instructor.

Typically Offered
Fall, Spring, Summer

BAE 626 - Bioseparations

Credits 3

Engineering principles of unit operations such as cell lysis and extraction, precipitation, centrifugation, membrane filtration, and chromatography and analytical methods used in bioprocess development.

Note

Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: BAE 445 or CHE 531 or instructor permission.

Typically Offered
Spring-Odd Years

Crosslisted
CHE 626

BAE 636 - Biological Systems Engineering Senior Design II

Credits 1-3

A continuation of BAE 536. Completion of a team-oriented design project, with emphasis on construction, evaluation, documentation, and presentation of the design.

Note

By appointment.

Repeat for Credit
N

Requisites
Prerequisite: BAE 536 or other approved capstone design

course.

Typically Offered

Fall, Spring

BAE 640 - Instrumentation and Control for Biological Systems**Credits 3**

Fundamentals of instrumentation and control engineering applied in biological and agricultural systems and processes. Time-domain analysis and frequency response methods. Sensors and actuators in feedback control systems. Control system design. Case studies.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 410 or ECE 519, and MATH 340.

Typically Offered

Spring

BAE 642 - Fundamentals of Conversion of Biorenewable Resources**Credits 3**

An introduction to the conversion of biorenewable resources into biobased products and biofuels.

Note

Three hours of recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220 and CHM 230.

Typically Offered

On sufficient demand

Crosslisted

Colisted with CHE 642

BAE 643 - Life Cycle Assessment**Credits 3**

Introduction to the life cycle assessment methodology for quantifying environmental impacts of products, processes, and systems. Topics include life cycle methodology, data inventory process and databases, life cycle impact modeling approaches and software, uncertainty quantification, and practical applications to demonstrate life cycle assessment as a tool for making decisions to improve sustainability of materials, products, and systems.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220 and either CHM 230 or CHM 250

Typically Offered

Spring

Crosslisted

CHE 643

BAE 645 - Bioenvironmental Reaction Engineering**Credits 3**

Bioreaction engineering principles with an emphasis on biological and environmental engineering with topics such as mass transfer, homogenous and heterogenous reactions, enzyme and cell growth kinetics, bioreactor configurations and operation, and sustainable bioprocessing.

Note

3 hour lecture per week.

Repeat for Credit

N

Requisites

Prerequisites: BAE 345 or CHE 354 and CHE 355 and BAE 445.

Typically Offered

Spring

BAE 650 - Energy and Biofuel Engineering

Credits 3

Principles of thermal energy, energy conversion, and bioenergy and biofuel production including biomass feedstocks, processing, and conversion. Energy and material balances of bioenergy production and processing systems.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ME 513.

Typically Offered

Spring-Odd Years

BAE 651 - Air Pollution Engineering**Credits 3**

Air pollution legislation, standards, measurement, and terminology. Design and economics of particulate pollution control systems including cyclones, fabric filters, wet scrubbers, and electrostatic precipitators. Abatement of gas and vapor pollution using VOC incineration, gas adsorption and gas absorption. Meteorology and atmospheric dispersion modeling.

Note

Three hours recitation.

Repeat for Credit

N

Requisites

Prerequisite: ME 513, 571.

Typically Offered

Spring

BAE 660 - Hydraulic Transport in Biological Systems**Credits 3**

Applications of fluid mechanics for design and analysis of hydraulic systems in biological systems and environmental engineering including: mass, momentum and energy balances; pressurized Newtonian and non-Newtonian flow

systems; irrigation principles; pumps; and hydraulic modeling.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 571 or CHE 530

Typically Offered

Fall

BAE 663 - Environmental and Ecological Risk Assessment**Credits 3**

Examination of processes and methodologies associated with three phases of human environmental and ecological risk assessments. Topics of contaminant release and exposure assessment, environmental transport theory and applications, and risk characterization. Experience in defining and quantifying uncertainty associated with human and ecosystem perturbation, risk management, and restoration of environmental and ecological resources.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and CHM 230 or CHM 250.

Typically Offered

Spring-Odd Years

Crosslisted

CHE 663

BAE 664 - Green Stormwater Infrastructure Design and Assessment**Credits 3**

Topics covered including engineering design of green infrastructure systems, including bioretention, stormwater wetlands, permeable pavement, and green roofs; methods for assessing the hydrologic and water quality performance

at the site- and watershed scales.

Repeat for Credit

N

Requisites

Prerequisite: BAE 560 or CE 550.

Typically Offered

Fall-Even Years

BAE 665 - Ecological Engineering Design

Credits 3

Definition, classification, and practice of ecological engineering. Course describes ecological systems, ecosystem restoration, and the utilization of natural processes to provide societal services and benefits to nature.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221 and one of the following courses: BAE 560, CE 563, BIOL 529, BIOL 612, ATM 661.

Typically Offered

Fall-Odd Years

BAE 669 - Watershed Modeling

Credits 3

Study and evaluation of process equations used in watershed-scale, water-quality models. Use and application of watershed models.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 508 and one of the following courses: BAE 560, CE 550, ATM 661.

Typically Offered

Spring-Even Years

BAE 740 - Biomaterials Processing

Credits 3

Technologies of bio-based material processing including starch extraction (wet milling), plant oil extraction and refining, plant protein extraction and processing, cellulose processing, biofuel production, chemicals bioconversion, and drying technologies or biomaterials.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: BAE 345 or BAE 545 or GRSC 602.

Typically Offered

Fall-Even Years

Crosslisted

GRSC 740

BAE 750 - Analysis and Design of Off-Highway Vehicles

Credits 3

Analytical study of design, testing, construction, and operating characteristics of off-highway vehicles and machinery. Includes human factors, mobility, and precision agriculture.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BAE 536 or ME 574.

Typically Offered

On sufficient demand

BAE 760 - Environmental Engineering Seminar

Credits 0

Discussion of current advances in research and practice of environmental engineering.

Note

One hour seminar biweekly.

Repeat for Credit

Y

Typically Offered

Fall, Spring

Crosslisted

CE 760

BAE 768 - Geoenvironmental Engineering Design**Credits 3**

A capstone design project in geoenvironmental engineering focused on resolving issues related to containment of pollutants and remediation of soil and groundwater.

Repeat for Credit

N

Requisites

Prerequisite one of the following: AGRON 605, AGRON 746, BAE 690, CE 625, CE 654, CHE 531, or GEOL 611.

Typically Offered

Spring

Crosslisted

CE 768 and CHE 768

BAE 810 - Research in Biological & Agricultural Engineering**Credits 0-18**

Research within the field of biological and agricultural engineering

Note

Approval of department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BAE 811 - Advances in Particle Technology**Credits 3**

Science and behavior of airborne particles or aerosols. Technology and methods for measuring, controlling, and utilizing aerosols in the agricultural and food industries. Specific topics include basic particle mechanics; principles of particle measurement; particle statistics; electrostatic precipitation; condensation; evaporation; dust generation; and filtration.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 703 or BAE 460 or STAT 510 or instructor permission.

Typically Offered

Spring

BAE 815 - Graduate Seminar 1: Literature Review**Credits 1**

Presentation and discussion of research philosophies, procedures, and results for engineers with emphasis on literature review.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall-Odd Years

BAE 816 - Graduate Seminar 2: Academic Writing and Publishing**Credits 1**

Presentation and discussion of research philosophies,

procedures, and results for engineers with emphasis on academic writing and publishing.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing

Typically Offered

Spring-Even Years

BAE 817 - Graduate Seminar 3: Data Interpretation and Presentation

Credits 1

Presentation and discussion of research philosophies, procedures, and results for engineers with emphasis on data analysis, interpretation, and presentation

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing

Typically Offered

Fall-Even Years

BAE 818 - Graduate Seminar 4: Research Presentation and Teaching

Credits 1

Presentation and discussion of research philosophies, procedures, and results for engineers with emphasis on research presentation and teaching

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing

Typically Offered

Spring-Odd Years

BAE 820 - Topics in Biological & Agricultural Engineering

Credits 1-18

A course reserved for study of current topics in agricultural engineering. Topics announced when offered.

Note

Instructor approval.

Repeat for Credit

Y

Typically Offered

On sufficient demand

BAE 840 - Measurement Systems

Credits 3

Theory and application of measurement systems for biological and agricultural systems with emphasis on sensors and data-acquisition systems for measurement of variables related to soils, plants, animals, machines, and processes.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: BAE 640.

Typically Offered

Fall

BAE 842 - Advanced Biomass Thermochemical Conversion

Credits 3

Thermochemical methods to convert biomass to fuels and chemicals: liquefaction, pyrolysis, gasification, and heterogeneous catalysis. Analysis of the reaction kinetics and mass, heat, and momentum transfer in chemical reactors associated with these methods.

Note

Three hours of recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 520 or ME 513 and CHE 550 or BAE 545.

Typically Offered

Fall-Odd Years

Crosslisted

Colisted with CHE 842.

BAE 843 - Advanced Life Cycle Assessment**Credits 3**

Theoretical underpinnings of the life cycle assessment methodology for quantifying environmental impacts of products, processes, and systems. Topics include life cycle methodology, data inventory process and databases, attributional and consequential modeling approaches, impact model theory and software tools, uncertainty quantification, and culminating project in system of choice.

Note

credit not granted for both BAE 643 and BAE 843

Repeat

N

for**Credit****Requisites**

Prereq: prior coursework in calculus and chemistry OR instructor permission

Typically

Spring

Offered**BAE 864 - Advanced Green Infrastructure Design and Assessment****Credits 3**

Advanced consideration of engineering design of green infrastructure and low impact development practices including bioretention, stormwater wetlands, permeable pavement, and vegetated roofs, as well as modeling tools for assessing hydrologic, water quality and broader environmental benefits of these systems at the site- and watershed scales.

Note

credit not granted for both BAE 664 and BAE 864

Repeat for Credit

N

Requisites

Prereq: BAE 560, CE 550, or other coursework in hydrology

Typically Offered

Fall-Even Years

BAE 865 - Advanced Ecological Engineering Design**Credits 3**

Advanced study of ecological engineering, systems and processes.

Note

Three hours recitation a week. Recommended background: Hydrology and Ecology. Not available for students with credit for BAE 665.

Repeat for Credit

Y

Typically Offered

Fall-Odd Years

BAE 869 - Advanced Watershed Modeling**Credits 3**

Advanced study and evaluation of process equations used in watershed-scale, water-quality models. Advanced application of watershed models.

Note

Three hours recitation a week. Recommended background: Hydrology and GIS. Not available for students with credit for BAE 669.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

BAE 898 - Master's Report**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BAE 899 - Master's Thesis**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BAE 999 - Dissertation Research**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOCH 100 - Biochemistry Orientation**Credits 1**

Discussion of biochemistry as a discipline in the life sciences.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

BIOCH 110 - Biochemistry and Society**Credits 3**

Topics in biochemistry related to aspects of daily living. Development of knowledge and skills for understanding bioscience information in news media and the Internet. Selected biochemical concepts with applications to humans, such as: chemical principles and biomolecules, nutrition/diets, growth and aging, disease, fermentation, drug action, medical diagnostics and forensics, and bioethics.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 111 - Biochemistry and Society Laboratory**Credits 1**

Experiments to promote understanding of chemicals and reactions in living systems.

Note

Three hours of laboratory a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 110 or concurrent enrollment.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 265 - Introductory Organic and Biochemistry**Credits 5**

For students in health and human sciences, nursing, and other areas desiring an integrated organic and biochemistry course to provide an understanding of carbohydrates,

proteins, lipids, and digestive and metabolic systems.

Note

Three hours lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 266 - Elementary Organic and Biochemistry with Home and Virtual laboratory

Credits 5

Provides an understanding of carbohydrates, proteins, lipids, and digestive metabolic systems.

Note

Three hours lecture and four hours of lab a week. The weekly lab exercises have two components: 1 in-home, hands-on experiment, and 1 virtual laboratory experiment, per week. In total the class will encompass 11 in-home and 11 virtual experiments.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite - CHM 110

Typically Offered

Fall, Spring, Summer

BIOCH 290 - Biochemistry Seminar

Credits 2

Lectures and discussions on basic topics in biochemistry.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 399 - Honors Seminar in Biochemistry

Credits 3

Lecture, guided reading, and discussion of topics of general interest in biochemistry. Topics will vary depending on the interests and backgrounds of students enrolled.

Repeat for Credit

N

Requisites

Prerequisite: Freshman Honors Seminar.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Note

May be used by honors students to satisfy BS requirement for BIOCH 799.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 521 - General Biochemistry**Credits 3**

A basic study of the chemistry and metabolism of carbohydrates, lipids, proteins, and nucleic acids.

Repeat for Credit

N

Requisites

Prerequisite: CHM 350 or CHM 531.

Typically Offered

Fall, Spring, Summer

BIOCH 522 - General Biochemistry Laboratory**Credits 3**

A one-semester laboratory course encompassing a connected series of experiments that span biochemical chromatographic techniques, PCR- cloning into plasmids by restriction fragment exchange, protein expression and purification by His-tag affinity chromatography, spectroscopic analysis of ligand binding, enzyme kinetics and inhibition.

Note

Two hours of lecture and six hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 351 or CHM 532 and BIOCH 521 or concurrent enrollment.

Typically Offered

Fall, Spring, Summer

BIOCH 523 - Introduction to Biochemical Methods**Credits 2**

A one-semester virtual laboratory course encompassing a connected series of experiments that span biochemical

chromatographic techniques, PCR- cloning into plasmids by restriction fragment exchange, protein expression and purification by His-tag affinity chromatography, spectroscopic analysis of ligand binding, enzyme kinetics and inhibition.

Note

Two hours of lecture and four hours of virtual laboratory experiments per week.

Repeat for Credit

N

Requisites

Prerequisites: CHM 350, CHM 351; BIOCH 521 or concurrent enrollment.

Typically Offered

Fall, Spring, Summer

BIOCH 571 - Medical Biochemistry**Credits 3**

Covers medically related concepts, structures, pathways and mechanisms in biochemistry. Addresses the fundamental biochemistry behind veterinary, medical or dental topics and issues. Instructs in the fundamental principles of protein structure and function, enzymology, carbohydrate and lipid metabolism, hormones, biochemical energetics, membranes, nucleic acid and protein metabolism, information transfer and the genetic code, genomic and proteomic analyses, the interdependence of biochemical pathways, pathogenesis and additional new topics.

Note

Serves as preparatory for the MCAT/DAT/GRE examinations.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Fall

BIOCH 599 - Research Training in Biochemistry

Credits 1-3

Provides laboratory experience for majors and nonmajors in research techniques contributing to ongoing biochemical research.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOCH 755 - Biochemistry I**Credits 3**

An introduction to physical methods, kinetics, and thermodynamics of biochemical reactions and bioenergetics, chemistry of proteins and amino acids, carbohydrate chemistry, and metabolism. BIOCH 755 and BIOCH 765 are for students interested in a two-semester comprehensive coverage of biochemistry. For a one-semester course, enroll in BIOCH 521.

Repeat for Credit

N

Requisites

Prerequisite: Chemical analysis, one year of organic chemistry, differential and integral calculus.

Typically Offered

Fall

BIOCH 756 - Biochemistry I Laboratory**Credits 2**

An intensive laboratory course to accompany BIOCH 755. BIOCH 756 and 766 are sequential courses for students interested in a two-semester comprehensive coverage of experiments in biochemistry. For a one-semester laboratory course, enroll in BIOCH 522.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: *BIOCH 755 or concurrent enrollment.

*Non-majors lacking these prerequisites should obtain consent of instructor before enrollment.

Typically Offered

Fall

BIOCH 757 - NMR Laboratory**Credits 1**

Basic methods and strategies of nuclear magnetic resonance used in the study of biological molecules. Principles and applications of simple one-dimensional and two-dimensional NMR experiments.

Note

Two three-hour laboratories per week. Meets second half of semester.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 755.

Typically Offered

Spring

BIOCH 758 - Protein Structure Laboratory**Credits 1**

Principles and uses of computational and experimental approaches for studying peptide and protein structure and dynamics: computer modeling and simulation techniques, fluorescence and circular dichroism spectroscopies, microcalorimetry, and analytical ultracentrifugation.

Note

Two three-hour laboratories per week. Meets first half of semester.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 755.

Typically Offered

Spring

BIOCH 765 - Biochemistry II**Credits 3**

Continuation of BIOCH 755; lipid chemistry and metabolism, amino acid metabolism, nutrition, nucleic acid chemistry and metabolism, integration of biochemical pathways and metabolic control mechanisms.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 755.

Typically Offered

Spring

BIOCH 766 - Recombinant DNA Laboratory I**Credits 1**

Biochemical manipulation of nucleic acids. Isolation of plasmid and chromosomal DNA, restriction enzyme digestions, gel electrophoresis. In vitro and in vivo plasmid assembly techniques, polymerase chain reaction, and DNA sequencing analysis. CRISPR/Cas gene editing in live cells.

Note

Two three-hour labs per week. Meets first half of semester.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 522. Recommended.

Typically Offered

Spring

BIOCH 767 - Recombinant DNA Laboratory II**Credits 1**

Approaches to study genetic interactions and protein-protein interactions using DNA techniques. Genomic integration of exogenous DNA, CRISPR/Cas editing, and

screening yeast two-hybrid methods. Site directed mutagenesis, protein domain analysis, and protein interaction detection methodologies.

Note

Two three-hour labs per week. Meets second half of semester.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 522.

Typically Offered

Spring

BIOCH 775 - Molecular Biophysics**Credits 3**

Survey of the biophysical methods most frequently encountered in biochemistry and related disciplines. A summary of concepts and techniques of physical science used in studying the structure and function of biomacromolecules such as proteins and DNA. Applications include classical equilibrium thermodynamics and analytical methods like mass spectrometry and circular dichroism (CD), fluorescence, EPR and nuclear magnetic resonance (NMR) spectroscopy. An emphasis on the underlying principles and techniques used in determining the molecular weight and shape of biopolymers, biochemical mechanisms of action, and observation of conformational changes in macromolecules.

Repeat for Credit

N

Requisites

Prerequisite: CHM 350/CHM 351 or CHM 531/CHM 532, MATH 221, PHYS 114, BIOCH 755, BIOCH 756, BIOCH 765.

Typically Offered

Spring

BIOCH 799 - Advanced Research Training in Biochemistry**Credits 0-18**

Supervised research experience in biochemistry and molecular biophysics.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOCH 806 - Biochemistry Seminar**Credits 0-1**

Seminar for graduate students in biochemistry.

Repeat for Credit

Y

Typically Offered

Fall, Spring

BIOCH 815 - Nuclear Magnetic Resonance (NMR) Spectroscopy of Macromolecules**Credits 2**

A lecture and laboratory course on 'state-of-the-art' multi-dimensional nuclear magnetic resonance methods and strategies in solving three dimensional structure of peptides, proteins, nucleic acids and other macromolecules.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Intersession

BIOCH 890 - Advanced Topics in Biochemistry**Credits 1-3**

Course to present timely topics in Biochemistry.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOCH 899 - Research in Biochemistry I**Credits 1-18**

Research in biochemistry which may be used for preparation of the M.S. Thesis.

Note

Sufficient training for research undertaken.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOCH 905 - Advanced Topics in Plant Biochemistry**Credits 3**

An advanced treatment of topics of current interest in plant biochemistry, including photosynthesis and carbon metabolism, nitrogen fixation and nitrogen metabolism, structure and function of the higher plant genome, and production of material of economic interest.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 765.

Typically Offered

Fall-Even Years

BIOCH 907 - Advanced Topics in Insect Biochemistry**Credits 3**

Lectures, readings, and discussion of topics of current interest in insect biochemistry. Topics will include biochemical molecules and processes specific to insects, such as biochemistry of the exoskeleton and regulation of metamorphosis, as well as comparison of insect and mammalian biochemistry.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521.

Typically Offered

Spring-Even Years

BIOCH 910 - Lipids**Credits 3**

Chemistry of plant and animal lipids, their occurrence, metabolism, and industrial uses.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 765.

Typically Offered

On sufficient demand

BIOCH 915 - Biomolecular Modeling**Credits 3**

Lectures on the basic principles and skills involved in computer modeling of biomolecules. Students will carry out projects that focus on practical aspects of utilizing publically available simulations and analysis tools to address questions in biochemical and biophysical research.

Repeat for Credit

N

Typically Offered

On sufficient demand

BIOCH 920 - Nucleic Acids**Credits 3**

Structure and function of nucleic acids: structures and properties of DNA, RNA, and chromatin; recombinant DNA techniques; mutagenesis and carcinogenesis; protein-nucleic acid interactions; structural influences on replication, transcription, translation, and regulation.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 765.

Typically Offered

On sufficient demand

BIOCH 925 - Molecular Mechanisms of Aging**Credits 3**

An exploration of the molecular, biochemical, and genetic pathways that are conserved among species and are involved in aging and age-related diseases.

Repeat for Credit

Y

Typically Offered

On sufficient demand

BIOCH 930 - Proteins**Credits 3**

Lectures and readings on the chemical nature of proteins; fractionation; purification, structure, chemical and physical properties of proteins and amino acids.

Repeat for Credit

Y

Requisites

Prerequisite: *BIOCH 755 and BIOCH 765.

Typically Offered

On sufficient demand

BIOCH 935 - Biochemistry of Cell Regulation**Credits 3**

Integration of biochemical pathways and molecular mechanisms regulating cell growth, movement, differentiation, and death. Emphasis on molecular interactions and signaling cascades controlling gene expression, protein synthesis and folding, proteolysis, cytoskeleton, cell cycle, cell survival, and apoptosis.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 765.

Typically Offered

Spring-Odd Years

BIOCH 950 - Advanced Topics in Protein Science**Credits 3**

Advances in protein biochemistry, including protein structure determination, dynamics, folding, stability, enzyme mechanism and regulation.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 765

Typically Offered

Spring-Even Years

BIOCH 997 - Postdoctoral Research in Biochemistry**Credits 1-12**

Advanced level research in collaboration with a faculty member, involving projects in any area of biochemistry. Post-graduate training in first three years beyond doctorate.

Repeat for Credit

Y

Requisites

Prerequisite: Ph.D. or equivalent.

Typically Offered

Fall, Spring, Summer

BIOCH 999 - Research in Biochemistry II**Credits 1-18**

Research in biochemistry which may be used for preparation of the Ph.D. Thesis.

Note

Sufficient training for research undertaken.*Nonmajors lacking these prerequisites should obtain consent of

instructor before enrollment.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 100 - Biology First-Year Orientation**Credits 1**

Each meeting of Biology Freshman Seminar covers a topic related to student success, including student help sources such as tutoring and academic coaching, the Career Center, student involvement opportunities within the Division of Biology (such as research), the university, and community. In addition, students develop a graduation plan after going over degree requirements and gain competency in navigating KSU online resources.

Repeat for Credit

N

Typically Offered

Fall

BIOL 101 - Concepts of Biology**Credits 4**

Fundamental concepts in evolutionary biology, ecology, cell biology, genetics, biodiversity, and the scientific method. The role of biology in society and the development of skills aimed at differentiation of biological fact from fiction are emphasized and explored.

Note

Concepts of Biology is an introductory biology course with a lab, and is intended for non-science majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

BIOL 198 - Principles of Biology

Credits 4

An introductory biology course with emphasis on understanding processes and linkages within and between different levels in the hierarchy of life. Specific areas covered include the scientific method, evolution, ecology, biological molecules, structure/function of cells, genetics, energy flow, biodiversity, and plant/animal biology. BIOL 198 is required in many science degree programs.

Note

Two two-hour studio sessions incorporating lecture and lab elements. At least one year of high school biology or chemistry is recommended.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOL 221 - Organismic Biology**Credits 5**

A study of the structure and function of organisms with special attention paid to the phylogenetic origins of taxonomic groups and the integration of their structural systems.

Note

Three hours lecture and four hours lab.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 or equivalent.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

BIOL 245 - Principles of Histology**Credits 2**

Introduction to the field of histology including methods of sample preparation, embryonic and fetal development of tissues, structure of primary tissues in fully formed vertebrate body, and examination of those primary tissue types in a variety of organs.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 or equivalent recommended.

Typically Offered

Summer

BIOL 255 - General Microbiology**Credits 4**

Microorganisms; their handling, morphology, growth, and importance.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and one course in chemistry.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOL 263 - Ecology of Environmental Problems**Credits 3**

Principles of ecology and their application to such problems as pollution, human population growth, and land-use planning.

Note

Two hours lecture and one hour discussion a week.

Repeat for Credit

N

Requisites

Prerequisite: One course in natural science.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

BIOL 330 - Public Health Biology**Credits 3**

Fundamental concepts of human infectious and organic diseases with emphasis on disease etiology and mechanisms, collection of epidemiological data, and the influences upon, and consequences of, governmental public health policy.

Note

Two hours lecture and one hour recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: One course in a natural science.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

BIOL 333 - Introduction to Fisheries, Wildlife, Conservation and Environmental Biology**Credits 3**

An introduction to the ecological and management principles associated with the fields of fisheries, wildlife, conservation, and environmental biology. Topics include population ecology and assessment, resource management, and environmental legislation. Prepares FWCEB majors for more advanced coursework and promotes the understanding of natural resource management for non-

majors.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Spring

BIOL 365 - Practicum in Biology**Credits 1-4**

Supervised experience as a teaching assistant in biology courses. Approximately 3 hours of commitment per week is expected for each credit hour earned. One hour recitation a week plus three to nine hours lab a week.

Note

Permission of instructor and credit with superior performance in the course in which the student will be involved.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 397 - Topics in Biology**Credits 1-6**

Special course offering in an area of faculty expertise and/or supervised independent study project.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 398 - Principles of Genetics**Credits 4**

An introduction to classical, molecular, quantitative, and population genetics. Human examples and comparisons between prokaryotic and eukaryotic genetics are emphasized. Topics include Mendelian inheritance, DNA and chromosome structure, cell division and DNA

replication, gene expression, mutation, recombinant DNA, genomics, quantitative inheritance, and population/evolutionary genetic principles.

Note

Three hours lecture and one hour recitation.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 198 and CHM 210 OR CHM 220 or concurrent enrollment. Concurrent enrollment in or completion of a college-level math or statistics course is recommended.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

BIOL 399 - Honors Seminar in Biology

Credits 1-3

Selected topics.

Note

Open to non-majors in the honors program.

Repeat for Credit

Y

Typically Offered

Spring

BIOL 410 - Biology of the Cancer Cell

Credits 3

Current concepts of cancer biology including roles of mutation, cell division, apoptosis, stem cells, microbes, and the immune system in promoting and/or inhibiting cancer.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in biology (BIOL 398 recommended).

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

BIOL 432 - Wild Bird Research

Credits 3

Hands-on training in both field methods involving the capture, handling, measurement, and sampling of wild birds as well as training in data manipulation, analysis in R, visualization, collaboration, and presentation of original research. Requires weekend participation once monthly. Assessment based on completion of assignments and project components as well as effort and progress in learning field methods.

Note

Note – 2-hour, Friday morning class sessions weekly; 3 consecutive mornings (Fri-Sat-Sun) in the field each month. Consent of instructor

Repeat for Credit

N

Typically Offered

Spring

BIOL 435 - Environmental Biology

Credits 3

An exploration of biological aspects, particularly ecological and evolutionary, as related to environmental issues. Topics include toxicology, global environmental issues, eutrophication, genetically modified organisms, emerging diseases, conservation, and relationship of human nature to causes of and solutions for environmental issues.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198, CHM 110 or 210.

Typically Offered

Spring

BIOL 441 - Human Body I

Credits 4

Human anatomy with an introduction to human physiology. Examination of cadavers, dissection of specimens, use and interpretation of EKGs, myelograms, and radiographs.

Note

Three hours of lecture and two hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 198, CHM 110/CHM 111 OR CHM 210, BIOL 398 Principles of Genetics OR PHYS 214 Engineering Physics II OR KIN 220 Biobehavioral Basis of Physical Activity OR any biology course with a lab component and BIOL 198 as a prerequisite, AND Sophomore standing. Recommended: Strongly recommended that students receive Bs or better in all prerequisite courses. It is also strongly recommended that transfer students complete at least one K-State Biology class before enrolling in BIOL 441.

Typically Offered

Fall, Spring

BIOL 442 - Human Body II**Credits 4**

Human physiology with a review of anatomy from Human Body I.

Note

Three hours of lecture and two hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 441.

Typically Offered

Fall, Spring

BIOL 443 - Applied Anatomy of Cadavers**Credits 3**

Course with lab components and teaching support in Human Body I (HB I; BIOL 441) lab. Consists of brief

lectures, dissections, reviewing material, exams, a final (autopsy report), and teaching support for anatomical demonstrations to HB I students. Objectives are: to develop cadaver dissection competence, to aid in a deeper understanding of anatomy and physiology, and to enhance critical thinking and teaching efficacy skills.

Repeat for Credit

N

Requisites

Prerequisite: Have earned a B or better in Human Body I (BIOL 441).

Typically Offered

Fall, Spring

BIOL 461 - Phage Hunters I**Credits 3**

Isolate bacteriophages from soil samples collected. Conduct electron microscopy, isolate bacteriophage DNA, and submit bacteriophage genomes for sequencing.

Note

One hour lecture and three hours lab per week.

Repeat for Credit

N

Typically Offered

Fall

BIOL 462 - Phage Hunters 2**Credits 2**

Analyze the genomes through bioinformatics and submit the collected data to Howard Hughes Medical Institute (HHMI) and GenBank.

Note

One hour lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 461

Typically Offered

Spring

BIOL 495 - Topics in Biology**Credits 1-6**

Supervised independent study project and/or special course offering in an area of faculty expertise.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

BIOL 496 - Honors Tutorial in Biology**Credits 1-3**

Individual directed research and study of a topic in biology, normally as a prerequisite to writing a senior honor thesis.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing, membership in the honors program of the College of Arts and Sciences, and permission of instructor.

Typically Offered

Spring

BIOL 497 - Honors Project**Credits 3**

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 500 - Plant Physiology**Credits 3**

Detailed consideration of physiological processes of higher plants.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and BIOCH 265 or another course in organic chemistry.

Typically Offered

Fall

BIOL 501 - Plant Physiology Lab**Credits 1**

Lab related to physiological processes of higher plants.

Note

Three hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent or previous enrollment in BIOL 500.

Typically Offered

Fall

BIOL 504 - Plant Ecology**Credits 3**

Study of the diversity and distribution of vegetation, relationships of plants to their physical environment, plant-animal-microbe interactions, population structure and dynamics, and plant community structure diversity, and succession. Field exercises focusing on methods of grassland and forest vegetation sampling and analysis.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and BIOL 221 or equivalent.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

BIOL 510 - Developmental Biology**Credits 3**

Introduction to the stages and mechanisms of embryonic animal development. Integrated approach that includes classic experimental embryology and the genetic and molecular regulation of invertebrate and vertebrate animal development.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398.

Typically Offered

Spring

BIOL 511 - Developmental Biology Laboratory**Credits 1**

Developmental Biology Laboratory

Note

One three-hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 510 or concurrent enrollment.

Typically Offered

On sufficient demand

BIOL 513 - Physiological Adaptations of Animals**Credits 4**

Integration of physiological mechanisms as the basis for adaptive responses of animals to different environments.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 221; and a course in organic chemistry or biochemistry.

Typically Offered

Fall

BIOL 515 - Behavioral Ecology**Credits 3**

Study of the social, environmental, genetic, and evolutionary processes that affect animal behavior. Topics include: evolution of social organization, spacing and group behavior, mating systems and parental care, sexual selection, communication, aggression, habitat selection, and foraging. Research project required.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Spring

BIOL 520 - Evolution**Credits 3**

A study of the theory of evolution including its historical and social implications.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 or a course in genetics.

Typically Offered

Spring

BIOL 521 - Evolution of Infectious Diseases**Credits 3**

The interplay of ecological interactions, evolutionary dynamics, and the mechanisms of host-microbe and microbe-microbe interactions shape the emergence and impact of infectious diseases. An interactive approach examines relationships among these factors. Key topics of discussion will include zoonotic infections, emerging infectious diseases, the spread of antimicrobial resistance, and the impact of public health measures.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 or BIOL 255 or ASI 500.

Typically Offered

Spring

BIOL 529 - Ecology**Credits 3**

Interdisciplinary examination of organisms and their interaction with the environment, ecosystem structure and function, population ecology and demography, community structure and dynamics, and basic ecological principles and their relevance to contemporary environmental issues.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and CHM 210.

Typically Offered

Fall, Spring

BIOL 530 - Pathogenic Microbiology**Credits 3**

Etiology and descriptions of major infectious diseases of humans within the perspective of host defenses.

Note

Two hours lecture and one hour laboratory-demonstration a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255.

Typically Offered

Fall

BIOL 541 - Cell Biology**Credits 3**

Structure and function of cells and subcellular components. A molecular understanding of membranes and cellular physiology will be emphasized.

Note

Three hours lecture.

Repeat for Credit

N

Requisites

Prerequisite: (BIOL 398 or ASI 500) and (CHM 350 or CHM 531).

Typically Offered

Fall, Spring

BIOL 542 - Ichthyology**Credits 3**

Systematics, morphology, physiology, distribution, and natural history of fishes.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 221.

Typically Offered

Spring-even years

BIOL 543 - Ornithology

Credits 3

Classification, morphology, physiology, distribution, and natural history of birds.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 221

Typically Offered

Spring

BIOL 544 - Mammalogy

Credits 3

Characteristics, evolution, life histories, and ecology of mammals, especially North American game species.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 221.

Typically Offered

Fall

BIOL 545 - Human Parasitology

Credits 3

Protozoan and helminth parasites of humans with lesser emphasis on ectoparasitic arthropods. Emphasis on life cycles, control, and laboratory diagnosis.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Spring

BIOL 546 - Human Parasitology Laboratory

Credits 1

Examination of prepared materials and identification of internal parasites of man.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent enrollment in BIOL 545.

Typically Offered

Spring

BIOL 551 - Taxonomy of Flowering Plants

Credits 4

Morphology, taxonomy, and biogeography of the vascular plants.

Note

Two hours lecture and two three-hour labs a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 221.

Typically Offered

Fall

BIOL 580 - Molecular Biology of Genes and Genomes

Credits 3

The molecular biology of eukaryotic gene expression and genome function, with an emphasis on gene expression as a regulated process. Selected topics in recombinant DNA and biotechnology, focusing on topics central to a modern understanding of gene regulation.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 398 and CHM 350.

Typically Offered

Fall

BIOL 604 - Biology of the Fungi

Credits 3

An introduction to fungal structure, function, physiology, ecology, and genetics. Importance of fungi as disease organisms, as saprotrophs, and in industry. Techniques of isolation, cultivation, and as experimental organisms.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Fall

BIOL 607 - Human Genetics

Credits 3

An exploration of human genetics from a molecular perspective, grounded in clinical applications. Provides theoretical knowledge and practical skills in human genome analysis, emphasizing the analysis of case studies and molecular diagnostics techniques. Through a combination of lectures, hands-on laboratory exercises, and discussions, students will examine the implications of genetics and genomics for medicine, clinical diagnostics, genetic counseling, and related fields.

Note

One hour of lecture and two two-hour lecture/labs per week.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 398 Principles of Genetics OR ASI 500 Genetics, and Junior standing.

Typically Offered

Spring

BIOL 609 - Cellular and Molecular Biology of Human Diseases

Credits 3

Fundamental basis of the major common non-infectious diseases and disorders affecting our society, with emphasis on the biochemical and molecular biological mechanisms by which the structures and functions of specific human tissues, organs and systems are altered.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 and BIOCH 521.

Typically Offered

Fall

BIOL 612 - Freshwater Ecology

Credits 4

Basic ecological principles of aquatic environments and environmental applications. Plants and animals of local streams, rivers, ponds, and reservoirs are used to demonstrate the interaction of biological processes with the chemical and physical features of natural aquatic environments.

Note

Three hours lecture, three hours lab a week; two optional weekend field trips.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and CHM 110 or CHM 210.

Typically Offered

Fall-Even Years

BIOL 632 - Ecology Laboratory

Credits 1

Laboratory and field experiences with ecological problems.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 529 and STAT 240 or equivalent.

Typically Offered

Spring

BIOL 636 - Cancer Therapy

Credits 3

Current methods of cancer management with emphasis on the kinetic principles of chemotherapy and radiation therapy; diagnosis; surgical oncology; oncologic emergencies; adverse effects of cancer therapy; and the new therapies.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 and BIOCH 521.

Typically Offered

Spring

BIOL 640 - Population Biology

Credits 3

An introduction to the theories of quantitative population biology including dynamics, demography and genetics. Emphasis on spatio-temporal variation within and among populations and species.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 and BIOL 529 and STAT 240.

Typically Offered

Fall

BIOL 642 - Principles of Conservation Biology

Credits 3

Biological diversity and the factors contributing to loss of biodiversity. Scientific principles of biological conservation emphasizing the application of ecological theory and population genetics to the conservation of threatened populations, species and ecosystems.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 and BIOL 529.

Typically Offered

Spring

BIOL 670 - Immunology

Credits 3

Covers history and overview of the mammalian immune system, innate immunity, immunoglobulins, cytokines, immunological methods, complement system, T cell and B cell development and their differentiation, barrier immunity, vaccines, hypersensitivity reactions, autoimmunity, immunodeficiencies, and anticancer immunity.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521 and BIOL 398 or ASI 500 with a C or better. BIOL 255 and BIOL 541 and senior standing are highly recommended.

Typically Offered

Spring

BIOL 671 - Immunology Lab**Credits 2**

Laboratory exercises in immunology.

Note

Three-hour lab a week plus one hour recitation.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 670 or concurrent enrollment.

Typically Offered

Spring

BIOL 675 - Genetics of Microorganisms**Credits 3**

The genetics of bacteria, viruses, and other microorganisms. Both the use of genetics in microbiological studies and the use of microbial systems to investigate basic genetic problems will be covered.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 and BIOL 255.

Typically Offered

Fall

BIOL 676 - Molecular Genetics Laboratory**Credits 3**

An advanced course in the techniques of molecular genetics and recombinant DNA technology, including molecular cloning, library screening, polymerase chain reaction, and RFLP and DNA sequence analysis. A number of projects will be completed during the semester.

Note

One-hour lecture and two three-hour labs.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 675 or concurrent enrollment.

Typically Offered

Fall

BIOL 682 - Fish Ecology**Credits 3**

The interaction between fish and their environment. Exploring fundamental ecological processes in aquatic systems at individual, population, community and ecosystem scales.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 529.

Typically Offered

Spring-Even Years

BIOL 684 - Wildlife Management and Techniques**Credits 4**

Concepts and techniques of wildlife ecology and management with emphasis on North American game species. Applied population dynamics as they relate to historical and recent developments in wildlife management, habitat improvement, and related material.

Note

Three hours lecture, one hour recitation, and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 333.

Typically Offered

Spring

BIOL 687 - Microbial Ecology

Credits 3

The ecology of aquatic, terrestrial, animal and plant host-associated microorganisms in their natural environments.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255 or BIOL 529.

Typically Offered

Spring

BIOL 695 - Internship in Biology

Credits 1-3

Undergraduate internship in Biology pursued outside Kansas State University, allowing the student to gain experience in career-relevant work. A minimum of 45 hours spent in internship is expected for each credit hour in which a student is enrolled

Note

This offering is coordinated through Biology's Office of Undergraduate Studies, and arrangements for enrolling and obtaining credit should be made prior to undertaking an internship. Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 696 - Fisheries Management and Techniques

Credits 4

Historical and contemporary issues in the management and conservation of exploited fishes. Methods for managing fisheries resources in streams, lakes, and ponds including estimating abundances, quantifying age and growth, manipulating populations, modeling population dynamics, culturing fishes, and improving aquatic habitat.

Note

Three hours lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 221 and BIOL 333.

Typically Offered

Fall-Even Years

BIOL 697 - Topics in Biology

Credits 1-6

Special course offering in an area of faculty expertise and/or supervised independent study project.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 698 - Research in Biology

Credits 0-8

Undergraduate research project pursued under the direction of a faculty mentor. A minimum of 45 hours of research effort is expected over the semester for each credit hour the student is enrolled.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

BIOL 699 - Undergraduate Seminar in Biology

Credits 1

Attendance at seminars or journal clubs with topics of a biological nature. A summary and personal reflection on each meeting is submitted for course credit.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

BIOL 705 - Eukaryotic Genetics**Credits 3**

An integrated exploration of transmission genetics and molecular genetics of eukaryotic organisms. The focus will be on genetic model organisms and their contributions to our understanding of mechanisms of genetic transmission and exchange, mutagenesis, gene expression, and regulation of cell division and development. Modern approaches to genomic analysis will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 and BIOCH 521.

Typically Offered

Fall

BIOL 707 - Advanced Cell Biology**Credits 3**

Selected current topics in cell biology which reflect recent advances in the field. Major topics include membranes and transport, protein sorting, signal transduction, cell adhesion and motility, cell cycle, apoptosis, and specialized cell functions.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 541.

Typically Offered

Fall

BIOL 730 - General Virology**Credits 3**

Theoretical and experimental basis of virology, with emphasis on how viruses manipulate cells to insure their own survival, mechanisms of virus replication, principles of virus host interactions including how viruses cause disease, and selected medically relevant viruses.

Repeat for Credit

N

Requisites

Prerequisite: Twelve hours of biological sciences, including BIOL 398 and BIOL 255; and BIOCH 521 or equivalent; consent of instructor.

Typically Offered

Spring

BIOL 734 - Introduction to Genomics and Bioinformatics**Credits 4**

A problem solving approach to understanding genomics and bioinformatics. Practical use of databases and web-based tools used to study biological problems. Introduction to the algorithms behind these tools.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 398 or CIS 575.

Typically Offered

Other

BIOL 743 - Advanced Ornithology**Credits 3**

Organized conceptually around the rapid decline of the continent's avifauna. Following an introductory module introducing the declines, the material is put in context, covering historic and geographic contexts, morphology and physiology, our local avifauna, tools and approaches in ornithology, birds in a changing world, behavioral diversity, and solutions to the problems faced by birds, globally.

Repeat for Credit

N

Requisites

Prerequisite: Open to all students enrolled in MS or PhD program in Biology or related fields.

Typically Offered

Spring

BIOL 805 - Advanced Mycology**Credits 3**

Study of fungi, with emphasis on structure, identification, classification, phylogeny, and economic importance.

Note

One hour lecture and six hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 604.

Typically Offered

Spring-Odd Years

BIOL 807 - Human Genetics**Credits 3**

An exploration of human genetics from a molecular perspective, grounded in clinical applications. Provides theoretical knowledge and practical skills in human genome analysis, emphasizing the analysis of case studies and molecular diagnostics techniques. Through a combination of lectures, hands-on laboratory exercises, and discussions, students will examine the implications of genetics and genomics for medicine, clinical diagnostics, genetic counseling, and related fields.

Note

One hour of lecture and two two-hour lecture/labs per week.

Repeat for Credit

N

Requisites

Prerequisite: A genetics course and graduate standing.

Typically Offered

Spring

BIOL 808 - Mechanisms of Gene Regulation**Credits 3**

Examines important concepts in the mechanisms of gene regulation at the molecular and atomic levels. Focuses on gene regulation at the level of transcription, splicing and translation and on diverse roles of RNA in catalysis, signaling and innate immunity.

Note

Composed of a lecture (2 hr) covering important concepts and a student recitation (1 hr) of scientific articles.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 541, or BIOL 705, or BIOL 707.

Typically Offered

Spring

BIOL 810 - Analysis of Ecological Gradients**Credits 3**

An introduction to analytical methods and conceptual approaches to evaluate patterns of communities across environmental gradients. Multivariate statistical techniques will be used to analyze data and quantify species abundance patterns in a variety of environments.

Repeat for Credit

Y

Typically Offered

Spring

BIOL 818 - Advanced Aquatic Ecology**Credits 3**

A study of advanced issues and methodology in limnological sciences, including a workshop on algal taxonomy, and an applied group project.

Note

Two lecture hours, two laboratory hours per week.

Repeat for Credit

Y

Typically Offered

Fall-Odd Years

BIOL 822 - Landscape Ecology**Credits 4**

Effect of spatial pattern on ecological processes. Course will emphasize how spatial complexity emerges and is maintained in ecological systems, the analysis of spatial pattern, scaling issues, the ecological consequences of spatial pattern and applications for conservation and ecosystem management in both aquatic and terrestrial systems.

Note

Two lecture hours, one discussion hour and three laboratory hours per week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 529.

Typically Offered

Fall-Odd Years

BIOL 823 - Demographic Methods**Credits 3**

Theory and methods of quantitative approaches for the study of population dynamics. Advances in matrix methods and mark-recapture statistics will be emphasized.

Note

Two hours lecture and one hour studio per week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 684 or BIOL 696.

Typically Offered

Fall-Even Years

BIOL 826 - Nutrient Dynamics**Credits 3**

The cycling of elements in ecosystems with emphasis on macronutrients such as nitrogen, phosphorous, and major cations, and the influence of variables such as acid rain on nutrient dynamics.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 529 and CHM 210.

Typically Offered

Spring-Odd Years

BIOL 830 - Advanced Virology**Credits 3**

In-depth readings and discussions of current topics in virology and the impact of viruses in medicine and biotechnology, with emphasis on recent research literature.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 730 or consent of instructor.

Typically Offered

Spring-Odd Years

BIOL 831 - Host-Pathogen Interactions**Credits 3**

Explores fundamental aspects of the mechanisms, ecology, and evolution of host-pathogen interactions. Students will have the opportunity to gain in-depth knowledge of these topics through reading, discussion, presentation, and writing exercises.

Repeat for Credit

N

Requisites

Prerequisite: Advanced undergraduate-level understanding of molecular biology/cell biology/ecology/evolution.

Typically Offered

Fall-Even Years

BIOL 835 - Cellular and Molecular Parasitology**Credits 3**

Biochemistry, immunology, and molecular biology of medically important eukaryotic parasites.

Note

Three hours lecture

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521 or equivalent.

Typically Offered

On sufficient demand

BIOL 840 - Molecular and Cellular Immunology**Credits 3**

Discussions and readings covering the molecular and cellular interactions during innate and adaptive immune responses.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 670.

Typically Offered

Fall-Odd Years

BIOL 850 - Advanced Topics in Immunology**Credits 1-2**

Current research in immunology.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 670 and consent of instructor.

Typically Offered

On sufficient demand

BIOL 855 - Molecular Biology of Cellular Membranes**Credits 3**

Intensive discussions of molecular interactions between proteins and lipids within cellular membranes, and the impact of these interactions on diverse cellular functions. Format is primarily group discussion of primary literature, with the goal of instilling the ability to think critically and evaluate published studies.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 541 and BIOCH 521.

Typically Offered

Fall

BIOL 860 - Modern Molecular Approaches**Credits 3**

An introduction to approaches and techniques used in the molecular analysis of biological systems, with a focus on modern molecular and cellular biological approaches. Format is primarily group discussion of primary literature, with the goal of instilling the ability to think critically and evaluate published studies.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 705 and BIOL 707.

Typically Offered

Spring

BIOL 863 - Professional Skills and Ethics**Credits 3**

An introduction for graduate students in the mechanics of becoming a scientist and professional biologist. Students actively participate in learning professional skills such as proposal writing and reviewing, professional oral and

poster presentations, communicating science to the general public, abstract and manuscript preparation, and other topics. Ethical conduct in research and professional settings is discussed throughout the course.

Note

Offered every spring, meets twice a week for 1.5 hours.
Required course for biology graduate students.

Repeat for Credit

Y

Typically Offered

Spring

BIOL 865 - Advanced Plant Ecology

Credits 4

Advanced study of theory in population and community ecology as applied to higher plants.

Note

Emphasis on current research in plant population ecology, species interactions, community structure, and four hours lecture/recitation per week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 529 or a plant ecology course.

Typically Offered

Fall-Even Years

BIOL 868 - Advanced Cellular and Developmental Biology

Credits 3

Chemistry, structure, and function of cellular systems in growth, development, and reproduction.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 755 or equivalent.

Typically Offered

Fall-Odd Years

BIOL 870 - Advanced Plant Systematics

Credits 4

Taxonomy, phylogenetic inference and major themes in the evolution of vascular plants.

Note

Two hours lecture, one hour discussion, and three hours lab per week. Lab format will include individual or small group research projects.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 551 and consent of instructor.

Typically Offered

Spring-Even Years

BIOL 875 - Evolutionary Ecology

Credits 3

A study of the evolution of population, community, and ecosystem structure.

Note

Two hours lecture and one hour recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 529.

Typically Offered

Spring-Odd Years

BIOL 886 - Confocal, Fluorescence and Light Microscopy

Credits 3

An introduction to theories, functions and applications of confocal, fluorescence and light microscopy, and fluorescent molecules. Lab emphasis on students working on independent research projects requiring microscopy.

Note

Two hours of lecture and three hours of lab per week.

Repeat for Credit
Y

Typically Offered
Fall-Odd Years

BIOL 888 - Electron Microscopy Techniques

Credits 3

Theory and techniques involved in using the transmission electron microscope for the study of biological materials. Includes individualized instruction on the operation of the Philips 201 electron microscope and techniques for processing biological samples.

Repeat for Credit
Y

Requisites
Prerequisite: Current participation in research requiring electron microscope.

Typically Offered
Fall-Even Years

BIOL 890 - Advanced Topics in Biology

Credits 1-6

Advanced biology.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

BIOL 891 - Advanced Problems in Biology

Credits 1-8

Advanced Problems in Biology

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

BIOL 895 - Graduate Seminar in Biology

Credits 0-1

Attendance/participation in departmental research-related seminars.

Repeat for Credit
Y

Typically Offered
Fall, Spring

BIOL 898 - Master's Research in Biology

Credits 1-9

Master's Research in Biology

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

BIOL 997 - Postdoctoral Research in Biology

Credits 1-12

Advanced-level research in collaboration with a faculty member, involving projects in any area of biology.

Repeat for Credit
Y

Requisites
Prerequisite: Ph.D. degree or equivalent.

Typically Offered
Fall, Spring, Summer

BIOL 998 - PhD Research in Biology

Credits 1-18

PhD Research in Biology

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

BIOL 999 - PhD Research in Microbiology

Credits 1-18

PhD Research in Microbiology

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

BME 200 - Introduction to Biomedical Engineering

Credits 3

Biomedical engineering addresses the application of engineering principles to challenges faced by the health care and life science communities. This course introduces students to the areas of study that comprise this broad field and provides students with guidance toward biomedical career opportunities. Topics of interest include the history of biomedical technology, medical devices, medical imaging, biomedical optics, biomechanics, biomaterials, tissue engineering, rehabilitation engineering, neural interfacing, prosthetics, assistive technology, telemedicine, home care, wearable devices, health care information technology, considerations for diverse populations, and medical ethics.

Note
Lecture.

Repeat for Credit
N

Typically Offered
Spring

K-State 8
Historical Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

BME 390 - BME Skill Development Experience

Credits 2

This course will focus on habits of mind and practical skill development within laboratory environments that incorporate wet-laboratory equipment, electronic devices/instruments, and resources for handling biological tissue. The instructor will emphasize the proper use of personal protective equipment, safe work practices, and principles of chemical, biological, electrical, fire, and radiation safety. Students will learn fundamentals of sterile techniques and address the appropriate operation, cleaning, and maintenance of laboratory equipment, electronic instrumentation, and electromechanical devices. Strategies for career development will be addressed in these contexts.

Note
1 hour lecture; 3 hours laboratory

Repeat for Credit
N

Requisites
Prerequisite: CHM 210 and BME 200

Typically Offered
Fall

BME 430 - Biomaterials

Credits 3

This course provides an overview of interactions between materials and biological systems, techniques to assess biomaterial characteristics, and the role of biomaterial selection during the design of medical devices for select applications.

Note
2 hours lecture; 3 hours laboratory

Repeat for Credit
N

Requisites
Prerequisite: BIOL 198 and CHM 230

Typically Offered
Fall

BME 432 - Introduction to Tissue Engineering

Credits 3

Tissue engineering is an emerging biomedical engineering field that addresses the creation, repair, or improvement of human and animal tissue via the growth and adhesion of biomolecules, cells, and other biomaterials. This course introduces the field of tissue engineering with an eye toward improved human and animal health. Interdisciplinary topics include cells/tissue, biomaterials, organ scaffolds, transplantation, and clinical applications of tissue engineering. Students will explore application areas such as skin regeneration, cartilage repair, and organ transplantation.

Note

This 3 credit course consists of 2 credits of lecture plus 1 credit of laboratory (3-hour session).

Repeat for Credit

N

Requisites

Prerequisites: BIOL 198 and (BME 390 or BAE 346 or BIOL 255 or CHM 531)

Typically Offered

Fall

BME 451 - Biomechanical Engineering**Credits 3**

This course provides an introduction to the mechanics of biological tissues and systems at the macroscopic scale. It covers the structure and mechanics of biological tissue based on the principles of statics and dynamics, with an emphasis on bone, muscle, and connective tissue.

Note

Lecture.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198, MATH 222, PHYS 213.

Typically Offered

Spring

BME 470 - Biomedical Device Components**Credits 3**

This course addresses medical device hardware components: electronic and electromechanical circuits and sub-systems that in aggregate perform medical device functionality. Passive/active electronic components include LED emitters, diode circuits, transistor assemblies, operational amplifier configurations, filters, and power supplies. Medical devices such as ventilators, insulin pumps, pacemakers, defibrillators, and IV pumps will provide context for homework assignments and hands-on laboratory exercises.

Note

2 hours lecture; 3 hours laboratory

Repeat for Credit

N

Requisites

Prerequisite: ECE 519

Typically Offered

Spring

BME 490 - Undergraduate BME Design Experience I**Credits 1**

The undergraduate design courses are intended to be taken during the fall and spring semesters of each BME student's junior year. The first semester is designed for project selection and planning, and it includes a lecture component to cover important considerations such as human subject protections and electrical safety. The follow-on course, BME 491, will focus on the implementation of the design selected in BME 490.

Note

Lecture.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214, BME 200 and Corequisite: BIOL 441 or KIN 360.

Typically Offered

Fall

BME 491 - Undergraduate BME Design Experience II

Credits 2

The undergraduate design courses are intended to be taken during the fall and spring semesters of each BME student's junior year. Students will participate in the guided design of a BME project selected in the previous semester. The course includes a lecture/meeting once per week, as well as a scheduled three-hour lab time for students to work on their design.

Note

Lab and Lecture.

Repeat for Credit

N

Requisites

Prerequisite: BME 490 and (BIOL 441 or KIN 360).

Typically Offered

Spring

BME 575 - Clinical Systems Engineering

Credits 3

This course addresses the creation and use of biomedical "systems of systems" as applied in various health care delivery scenarios, including hospitals, home care settings, and environments that employ personalized wearable systems. The material focuses on technical areas typically associated with the field of "clinical engineering," emphasizing the use of design standards that promote system interoperability and reconfiguration. Hardware/software interfacing and information management will be addressed from the sensor level to the level of the clinical enterprise. The course will also address human elements related to such systems (e.g., human factors, safety, medical ethics, training, etc.) as well as global technical, political, and sociological issues that may promote or hinder their use in different countries and cultures.

Note

Lecture.

Repeat for Credit

N

Requisites

Prerequisite: ECE 540 or equivalent.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

BME 590 - Senior Design Experience I

Credits 3

The two-semester BME senior design experience is a culminating design sequence intended for the last two semesters of each BME student's degree program. BME 590 – the first course in that sequence – integrates practice in verbal/written communication skills with the initiation of a collaborative design project to emulate a professional technical environment. The course addresses engineering ethics, design theory, project management, team dynamics, and socio-economic considerations related to design.

Note

Lecture

Repeat for Credit

N

Requisites

Prerequisite: BME 491, ECE 540, and ENGL 415

Typically Offered

Fall, Spring

BME 591 - Senior Design Experience II

Credits 2

The two-semester BME senior design experience is a culminating design sequence intended for the last two semesters of each BME student's degree program. BME 591 – the second course in that sequence – addresses the implementation and demonstration of the project design initiated in BME 590. The course includes oral presentations for design reviews and technical documentation, where the latter addresses project plans; design operations, analyses, architecture, and requirements; design descriptions; and a user manual.

Note

Two hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: BME 590.

Typically Offered

Fall, Spring

BME 674 - Medical Imaging**Credits 3**

This course addresses various modalities of medical imaging as an extension of biomedical instrumentation. Methods for image data acquisition, processing, and display form the core for this course, which also addresses industry standards for image storage and transmission. Diagnostic applications for medical images are emphasized along with safety and ethics issues that relate to the acquisition and management of biomedical image data.

Note

Lecture

Repeat for Credit

N

Requisites

Prerequisite: ECE 512.

Typically Offered

Spring

BUS 001 - Kansas Wesleyan Exchange Program**Credits 1-6**

Kansas Wesleyan Exchange Program

Repeat for Credit

Y

Typically Offered

Other

BUS 110 - Introduction to Business**Credits 3**

This course surveys the objectives, decisions, and activities

within a business organization. Topics include a study of management responsibilities and controls, organizational structures, and marketing activities.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

BUS 251 - Financial Accounting**Credits 3**

Study of business topics such as alternative forms of business organizations; typical business practices; legal instruments such as notes, bonds, and stocks; and financial statements and analysis. The main objective is to develop the ability to provide information to stockholders, creditors, and others who are outside an organization.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

BUS 252 - Managerial Accounting**Credits 3**

This course outlines the use of internal accounting data by managers in directing the affairs of business and non-business organizations.

Repeat for Credit

N

Requisites

Prerequisite: BUS 251.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

BUS 315 - Supervisory Management**Credits 3**

An analysis of the responsibilities and work environment of a supervisor, with an examination of skills, practices, and concepts helpful in developing effective relations with people in today's changing environment.

Note

The course includes an international emphasis using South Asia as a case study.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

BUS 320 - Total Quality Management for Technology**Credits 3**

This course addresses the commitment of management and the organization as a whole to the cultural changes necessary to implement quality improvements throughout the organization. Topics include quality organization and philosophy, quality audit and ISO 9000 series, integration of functional areas, team building, management principles, quality costs, and other associated interactive facets of Total Quality Management. The main concern is to provide the student with a working knowledge of conventional TQM tools.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

BUS 366 - Management with Information Technology**Credits 3**

A comprehensive view of the role of information technology in satisfying organizations' information requirements. Problems and techniques concerning the management of responsive information systems with special attention to managers' use of systems outputs. Cases and hands-on exercises emphasizing the use of information systems in decision making, information gathering and organizing, use of modeling techniques, and presentation of information.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

BUS 390 - Foundations of Business Law**Credits 3**

A study of law as it relates to business, including court procedures and systems, contracts, torts, agency and employment law, and business crimes.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

BUS 400 - Marketing Techniques and Applications

Credits 3

A general study of marketing principles which lead to the development of marketing strategy. A review of environmental influences and key analytical tools used in formulating marketing plans. Product or service design, distribution, pricing, and promotional programs.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

BUS 410 - Managerial and Project Economics

Credits 3

Economic analysis of problems as applied to managerial decision making. Students consider the economic viability of solutions in engineering and a variety of other kinds of projects common in technology-oriented businesses.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100.

Typically Offered

Fall

Crosslisted

MET 410

K-State 8

Social Sciences

BUS 420 - Management Perspectives

Credits 3

Provides an introduction to the four basic managerial functions of planning, organizing, leading and controlling and their application to today's complex work environment. An emphasis is placed on the roles and responsibilities of managers that help them to successfully meet

organizational objectives by effectively leading employees and optimizing processes.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

BUS 421 - Applied Operations Management

Credits 3

Description and analysis of problems related to the output of goods and services, operations planning and control, and systems management.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

BUS 450 - Integrated Finance

Credits 3

Study of the basic principles of finance, including discounted cash flow analysis, risk-return tradeoff, asset pricing models, and financial and real asset valuation. Applications of these concepts to the firm's investment and financing decisions and performance analysis will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: BUS 251.

Corequisite: STAT 225 and ECON 110 or ECON 120.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

BUS 520 - Integrated Technology Management Capstone

Credits 3

A capstone course which integrates the functional areas of business, including management, marketing, finance, accounting, operations and production. The course uses business strategy simulation and case studies to apply acquired knowledge across various areas of concentration for successful business management.

Repeat for Credit

N

Requisites

Prerequisite: Senior Standing.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

BUS 530 - Practices of Industrial and labor Relations

Credits 3

Basic course in industrial and labor relations. Broad coverage of the institution of collective bargaining and its environment, the goals and operation of labor unions, the impact of unions on management, and labor relations law.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

BUS 531 - Strategic Human Resource Management

Credits 3

This course provides an overview of the human resource systems and processes needed to achieve organizational effectiveness and strategic success. All key functional areas including human resource planning, staffing, performance management, employee development, and compensation

are addressed.

Repeat for Credit

N

Requisites

Prerequisite: BUS 315 or BUS 420.

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

BUS 542 - Personal Selling and Sales Management

Credits 3

Focuses on interpersonal communications between buyers and sellers, both oral and written. The mechanics and intricacies of personal sales presentations, which will be developed through practice.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent enrollment: BUS 400.

Typically Offered

Spring

CC 110 - Introduction to Computing

Credits 2

An overview of the history of computers and programming. Famous historical figures and their impact in modern computing. Introduction to major topics in computer science such as artificial intelligence, high performance computing, cryptography, big data, cybersecurity, robotics, and more.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CC 111 - Elements of Computer Programming

Credits 1

Brief experience with computer programming concepts such as variables, data types, functions, conditionals, iteration, and collections.

Repeat for Credit

N

Requisites

Corequisite: CC 110. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring, Summer

CC 120 - Web Page Development

Credits 3

The Internet, web browsers, and web-page-development technology: web-page design and implementation with Hypertext Markup Language (HTML), and CSS. Integration of program script into web pages. Introduction to graphics design, animation, and server utilization.

Repeat for Credit

N

Requisites

Prerequisite: CC 111 or CIS 116. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CC 210 - Fundamental Computer Programming Concepts

Credits 4

Basic concepts in developing computer programs: program structure and syntax, primitive data types, variables, control flow, iteration, simple algorithms, debugging, and good software development practices. Introduction to object-

oriented programming.

Repeat for Credit

N

Requisites

Prerequisite CC 111. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

CC 310 - Data Structures and Algorithms I

Credits 3

Exploration of data structures & related algorithms in computer programming. Basic concepts of complexity analysis. Object-oriented design concepts.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100 and CC 210. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring, Summer

CC 315 - Data Structures and Algorithms II

Credits 3

Advanced data structures and related algorithms. Formal software development methods and software engineering fundamentals. Introduction to requirements analysis processes that provide the specification of algorithmic requirements.

Repeat for Credit

N

Requisites

Prerequisite: CC 310. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Fall, Spring, Summer

CC 410 - Advanced Programming

Credits 4

Advanced programming techniques and projects. Concepts from simulation and modeling, media applications, secure design, information management, parallelism, and networking. Software development methodologies, processes, and design patterns. Practical experience with professional communication and collaboration.

Repeat for Credit
N

Requisites
Prerequisite: CC 310. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Fall, Spring, Summer

CC 510 - Computer Systems Administration

Credits 3

Administration of the Windows and Linux operating systems, including installation, configuration, distributed file systems, firewalls and security, shell scripting, and user account management. Introduction to managing cloud computing resources.

Note
Not available for credit to students with credit in CIS 527.

Repeat for Credit
N

Requisites
Prerequisite: CC 310. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Fall

CC 515 - Full Stack Web Development

Credits 3

Fundamental principles and best practices of web development, user interface design, web API design, advanced web interfaces, web development frameworks, single-page web applications, web standards and accessibility issues.

Note
Permission to take this course concurrently with CC 410 may be granted to well-prepared students. Not available for credit to students with credit in CIS 526.

Repeat for Credit
N

Requisites
Prerequisite: CC 410 and either CC 120 or CMST 135. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Spring

CC 520 - Database Essentials

Credits 3

Introduction to concepts and techniques in database management. Overview of relational databases, NoSQL databases, and related topics. Database programming and use of databases in applications. Theory and architecture of database management systems (DBMS).

Repeat for Credit
N

Requisites
Prerequisite: CC 410. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Spring

CC 535 - Applied Data Science

Credits 3

An introduction to data science and discovery from data: Data wrangling, feature engineering, feature selection, statistical inference, correlations, principal component analysis, classification, regression, novelty detection, clustering, cross-validation, bootstrapping, class profiling, multidimensional scaling, association rules, visualization,

data science and society.

Repeat for Credit

N

Requisites

Prerequisite: CC 210, and experience with the Python programming language. Students may enroll in CC courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CC 590 - Special Topics in Applied Computer Science

Credits 1-4

Selected topics in applied computer science.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CC 710 - Introduction to Computing for Educators

Credits 2

This course is a first step in preparing educators to teach computer science topics at the PreK-12 level. It provides content area knowledge including the historical context in which computing developed, an overview of the modern field of computing and its impacts on society. It also explores theories of computational thinking and learning, computer science education research, and the Kansas PreK-12 computer science standards.

Note

For education majors only.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CC 711 - Computer Education Programming Fundamentals

Credits 1

This course introduces PreK-12 educators to the "Big ideas" of programming - concept knowledge that is critical for developing and teaching programming skills. Students will learn to read simple program code, write short programs, and explore basic programming constructs such as conditional statements and iteration. Students will also explore basic programming concepts related to a particular discipline.

Note

For education majors only.

Repeat for Credit

N

Requisites

Corequisite: CC 710

Typically Offered

Fall, Spring, Summer

CC 730 - Computer Programming for Educators

Credits 4

The course introduces PreK-12 educators to computer programming using one of several programming languages. Interactive lessons and engaging projects reinforce new skills and concepts while exploring pedagogical strategies for teaching programming. This course covers the basic concepts of programming, from variables and control flow to functions, objects, and simple algorithms.

Note

For education majors only.

Repeat for Credit

N

Requisites

Prerequisite: B or better in CC 710 - Introduction to Computing for Educators and B or better in CC 711 - Introduction to Computing for Educators Lab

Typically Offered

Fall, Spring, Summer

CC 750 - Data Structures and Algorithms for Educators I

Credits 3

This course provides PreK-12 educators the content knowledge necessary for teaching simple data structures such as sets, lists, stacks, queues, and maps. Students learn how to create data structures and the algorithms to work with them. Students are introduced to algorithm analysis to determine the efficiency of algorithms. It also addresses strategies for teaching these concepts to a diverse audience.

Note

For education majors only.

Repeat for Credit

N

Requisites

Prerequisite: B or better in MATH 100 - College Algebra and B or better in CC 730 - Computer Programming for Educators

Typically Offered

Fall, Spring, Summer

CC 755 - Data Structures and Algorithms for Educators II**Credits 3**

This course provides PreK-12 educators the content knowledge necessary for teaching advanced data structures, such as trees, graphs, and heaps, along with pedagogical approaches for teaching the associated concepts and skills. Several new algorithms using these data structures are covered. Students also learn software development methods and software engineering fundamentals and use those skills to develop projects of increasing size and scope effectively.

Note

For education majors only.

Repeat for Credit

N

Requisites

Prerequisite: B or better in CC 750 - Data Structures and Algorithms for Educators I or Instructor Permission

Typically Offered

Fall, Spring, Summer

CC 760 - Advanced Computing for Educators**Credits 4**

This course helps PreK-12 educators gain experience writing programs using a variety of advanced programming techniques including object-oriented programming, inheritance, and events. It also introduces software development methodologies, processes, and design patterns, along with pedagogical strategies to teach them. It also emphasizes collaboration skills and tools used by professional programmers.

Note

For education majors only.

Repeat for Credit

N

Requisites

Prerequisite: B or better in CC 755 - Data Structures and Algorithms II for Educators or Instructor Permission

Typically Offered

Fall, Spring, Summer

CC 798 - Topics in Computing for Educators**Credits 1-18**

Topics in Computing Education for PreK-12 educators. Topics will be determined by faculty.

Note

For education majors only. Instructor permission.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CDPLN 612 - Indian Country Agriculture and Natural Resources**Credits 3**

An introduction to the historical and contemporary issues related to natural resource management on Native American lands. Study will include a variety of ecological settings across Native American lands, along with an analysis of tribal sovereignty as it relates to land tenure and water rights. Arguments concerning natural resource conservation, preservation and extraction will be explored.

Repeat for Credit

N

Requisites

Prerequisite: CDPLN 714.

Typically Offered

Summer

CDPLN 613 - Youth Development in Native Communities**Credits 1**

Focus on contemporary issues impacting native youth including: Demographics (Criminal justice, early parenting, poverty, education, suicide and morbidity), identity formation (risky behavior and achievement opportunities), health care (diabetes, obesity, fetal alcohol), prevention activities (4H, BGC, horse clubs, running strong), and influx of youth leadership (youth-elder connections).

Repeat for Credit

N

Requisites

Prerequisite: CDPLN 714.

Typically Offered

Fall, Spring, Summer

CDPLN 614 - Wellness in Native Communities: Challenges and Opportunities**Credits 1**

Healthcare issues challenging Native communities, and strategies and practices to address those challenges. Focus on the impact of the Indian Health System, other bureaucratic systems, and current consumer practices that impact healthcare for Native peoples and the ways tribes are working to create healthier communities and improve the lifestyle of Indian people.

Repeat for Credit

N

Requisites

Prerequisite: CDPLN 714.

Typically Offered

Fall

CDPLN 615 - Role of Tribal Colleges in Economic Development**Credits 1**

Focus: the role of tribally-chartered colleges/universities in economic development within Native communities. Topics include the use of bonding/bridging social capital, the historical and contemporary case for tribally-chartered higher education, the economic impact of tribal colleges on their local economies, and opportunities/challenges of broad and diverse collaborative networks.

Repeat for Credit

N

Typically Offered

Summer

CDPLN 620 - Ecological Economics**Credits 3**

Synthesis across the notion of "utility" as represented in environmental/natural resource economics, as well as the notion of "ecology" in ecological economics. Focus will be on the influence the community and ecosystem have on one another, and the potential for complementarity between the two.

Repeat for Credit

N

Typically Offered

Fall

CDPLN 622 - Impact Analysis**Credits 1**

The basics of economics and fiscal impact analysis are explored, including the scenario construction, basics of input-output analysis, careful use of multipliers, estimations of local revenues and expenditures and discounting.

Repeat for Credit

N

Typically Offered

Spring

CDPLN 623 - Local Economic Analysis

Credits 1

This course teaches economic base theory, a theory of regional economics, multipliers and how local economics are affected by external events. Basic methods for the analysis of a local economy are covered, including trend analysis, location quotients, shift share analysis and retail trade analysis.

Repeat for Credit

N

Typically Offered

Spring

CDPLN 624 - Community Developer as Community Educator**Credits 3**

A graduate level course on education strategies and tools for use in community development. This course will develop students' identities as community educators and provide knowledge on appropriate methodologies for working with adults in community settings, as well as develop their creativity and critical thinking skills. Students will engage in peer-to-peer teaching and critical analysis of community education activities.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CDPLN 625 - Participatory Action Research Methods (PAR)**Credits 3**

A graduate level course to develop participatory action research knowledge and skills through real-world applications. PAR is a method of collecting information by community members in collaboration with a researcher that respects, places community central to, and reflects the experiences and culture of the people most directly impacted by the issue under consideration.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CDPLN 631 - Leadership for Change**Credits 3**

Course focus is on the role of leadership in community development and change, including situating leadership in the community development process, reviewing the effectiveness of different leadership styles, and relating leadership to community. Skills and processes that facilitate effective shared leadership, including facilitation, conflict resolution, use of participatory techniques, etc., are explained.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CDPLN 633 - Grantwriting**Credits 3**

The intricacies of grantsmanship provide the focus of this course. Topics covered will include identification of fund sources, procedures for proposal preparation, composition of grants, and the effects of organizational and personal linkages. Students will prepare a grant application based upon an RFP or to a continuous funding source.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CDPLN 650 - Community Economic Development for the 21st Century**Credits 3**

Study of the basic theories, concepts, and skills necessary to be a part of a productive community economic development team. Focus is on the importance of organizational values, mission and vision, as well as six approaches to development. The course will cover the five community functions, development strategies, action planning, and organizing for action.

Repeat for Credit

N

Typically Offered
Fall, Spring, Summer

CDPLN 655 - Land Development Planning

Credits 3

An examination of the process of land development in the United States, and its impacts from the perspective of developers, financial institutions, community planners, and city administrators. Focus is on the understanding of the land development process in meeting community goals, and shaping land development to meet community expectations for the improvement of the community.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

CDPLN 660 - Policy and Politics of Coastal Areas

Credits 3

One half of the world's population lives on a coast and two-thirds of the world's largest cities are located on a coast. This course addresses the environmental, land use, and other critical issues affecting these areas worldwide.

Repeat for Credit
N

Typically Offered
Summer

CDPLN 700 - Foundations of Community Development

Credits 3

This course is an introduction to the Community Development (CD) program, discipline, and profession.

Repeat for Credit
N

Typically Offered
Fall, Spring

CDPLN 701 - Special Studies in Community Development

Credits 1-3

Independent study on special topics of interest in community development.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

CDPLN 702 - Community Engagement

Credits 3

This course is designed to help students add to their knowledge base and build their confidence in community engagement so that dialogue and deliberations leading to public decision making can be more productive and positive for everyone involved.

Repeat for Credit
N

Typically Offered
Fall-Odd Years

CDPLN 703 - Applied Community Development

Credits 1-3

This course provides students the opportunity to apply knowledge to professional practice. Students will produce a written report on a project of focus, which they have worked on directly, relating their experience to concepts and skills learned through the community development curriculum. Projects must exist at the time of the course and may consist of activities via internships, coursework or capstones outside of the community development curriculum, or personal interests.

Repeat for Credit
Y

Requisites

Prerequisite: Admission to the Master of Science in Community Development program or enrollment in Graduate Certificate in Community Development program and instructor permission. All others contact

gpideacc@ksu.edu.

Typically Offered

Fall, Spring, Summer

CDPLN 704 - Community Leadership and Capacity Building

Credits 3

Explorations of the various approaches to leadership and leadership development, evaluation of leadership projects and the relationship of leadership to community capacity building. Topics include defining leadership and applying it to the workplace, and understanding the potential link between leadership and community capacity, as well as identifying strategies for leadership development in communities.

Repeat for Credit

N

Typically Offered

Fall

CDPLN 705 - Organizing for Community Change

Credits 3

Examination of the role of society in community planning efforts. Focus on change within communities and the roles of government, planners, and citizens in reacting to or shaping change. Dimensions of social capital and the context of change and the implications of economic and demographic shifts on strategies and tactics for change will be explored.

Repeat for Credit

N

Typically Offered

Summer

CDPLN 706 - Economic Development Strategies and Programs

Credits 3

Course explores theories of local economic development and addresses the development issues faced by communities in the 21st century. Students will understand

and apply concepts from economic development planning, economic analysis, business development, human resource development, community-based development, and high-technology development.

Repeat for Credit

N

Typically Offered

Fall-even years

CDPLN 707 - Evaluations of Organizations and Programs

Credits 3

This course is an introduction to philosophy, techniques, and methodologies of organizational and program evaluation. Topics covered in the course include overview of program evaluation and theory, techniques to evaluate program processes and performance, evaluation designs, assessing program efficiency, models to diagnose organizations, and methods to assess organizational performance.

Repeat for Credit

N

Typically Offered

Spring-Even Years

CDPLN 708 - Government, Politics and Community Development

Credits 3

Introduction to classical and contemporary concepts of federalism, public administration, public policy, and politics with an emphasis on their bearing on community development activities and outcomes.

Repeat for Credit

N

Typically Offered

Spring

CDPLN 709 - Housing and Development Programs

Credits 3

In this course, students review and evaluate historical and current housing issues, production, and financial systems. This includes consideration of racial, ethnic, income, and gender issues as they relate to the role of housing developments and programs in community development.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

CDPLN 710 - Community Analysis

Credits 3

An introduction to research methods relevant to community development. Topics include how to formulate and begin a research effort, methods of data collection and how conceptual frameworks are used to develop the questions and analyze data. Also included are strategies for reporting findings and applying findings in community action.

Repeat for Credit

N

Typically Offered

Spring

CDPLN 711 - Immigrants in Communities

Credits 3

International migration has historically impacted rural and urban communities around the world. Taking a comparative approach, this course examines community-immigrant interactions and influences on community development and immigrant inclusion. Readings relate theories of immigrant and community change to case studies. Students will gather primary data to assess the capacity of communities to include new international immigrants.

Repeat for Credit

N

Typically Offered

Summer-Odd Years

CDPLN 712 - Sustainable Communities

Credits 3

The management of natural capital as linked to other

community-based actions around resource allocation and the impacts on quality of life. The literature on community-based natural resource management will be examined and alternative ways of valuing natural capital will be assessed. Contrasting theories of the role of natural capital in communities.

Repeat for Credit

N

Typically Offered

Fall

CDPLN 713 - Nonprofit Management

Credits 3

Managing nonprofits including the role of nonprofit organizations in addressing various social problems. Topics include individual giving/volunteering, board and executive leadership, government and nonprofit relationship, ethics and accountability, and issues and challenges in nonprofit management. Managing nonprofits including the role of nonprofit organizations in addressing various social problems. Topics include individual giving/volunteering, board and executive leadership, government and nonprofit relationship, ethics and accountability, and issues and challenges in nonprofit management.

Repeat for Credit

N

Typically Offered

Summer-Even Years

CDPLN 714 - Introduction to Native Community Development

Credits 3

This course develops a basic understanding within the context of community development of the diversity of tribal structures and cultures and the unique history and jurisdictional considerations of these nations.

Repeat for Credit

N

Typically Offered

Fall-Even Years

CDPLN 715 - Principles and Strategies of Community Change

Credits 3

An analysis of the principles and practices of community change and development, using case studies and the students' communities of reference. the course will relate Community Development approaches to conceptual models from diverse disciplines. Conceptual models include conflict, neo-classical economic growth, participatory democracy, and others.

Repeat for Credit

N

Typically Offered

Fall

CDPLN 716 - Building Native Communities and Economic Capacity**Credits 3**

This course will focus on non-western approaches to helping native communities build their capacity. Students will learn to take a participatory, culture-centered, and strength-based approach to development.

Repeat for Credit

N

Typically Offered

Spring-Even Years

CDPLN 720 - Community and Regional Economic Analysis**Credits 3**

The course introduces concepts of communities and regions, theories of economic growth, drivers of economic growth, the economic base of a community, sources of growth or decline in the community, roles of local government and institutions, analytical tools, and strategies for local economic development.

Repeat for Credit

N

Typically Offered

Fall

CDPLN 721 - Community and Regional Economic Analysis II**Credits 3**

This course will develop a substantive grounding in the theories and practice of measuring community economic dynamics plus build solid foundation skills for applied community economic analysis. Elements include basic descriptive tools of community economic analysis, such as economic base evaluation, industrial mix analysis, trade area assessment, and industrial and occupational composition analysis, input-output industrial accounting for economic impact analysis and the development of fiscal impact assessment techniques, and measures of public policy effectiveness.

Repeat for Credit

N

Typically Offered

Summer

CDPLN 725 - Community and Natural Resource Management**Credits 3**

An introduction to the breadth of consideration involved in community resource management. Included are theoretical frameworks, methodological investigation and applied practices to enhance the ability of community development professionals to work with their communities to plan, develop, and monitor the conversion and development of natural resources with multiple functions.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CDPLN 880 - Topics in Community Development**Credits 1-3**

Independent study of selected concepts and trends in community development. Students electing this course offering will be preparing a specialization paper as their final project.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

CDPLN 897 - Proposal Writing

Credits 1

Development of a master's report or thesis proposal.

Repeat for Credit
N

Requisites
Recommended prerequisite: completion of a minimum of 30 credit hours in the Community Development program.

Typically Offered
Fall, Spring, Summer

CDPLN 899 - Research in Community Development

Credits 0-18

Original research and advanced study in community development and related fields for the master's report.

Repeat for Credit
N

Requisites
Prerequisite: CDPLN 880.

Typically Offered
Fall, Spring, Summer

CE 015 - Engineering Assembly

Credits 0

Engineering Assembly

Repeat for Credit
Y

Typically Offered
Fall, Spring

CE 101 - Introduction to Civil Engineering

Credits 1

Introduction to careers in civil engineering (construction, environmental geotechnical, structures, transportation, and water resources). Overview of CE educational requirements. History of the CE profession. Engineering ethics.

Note
One hour of lecture per week.

Repeat for Credit
N

Typically Offered
Fall

CE 201 - Civil Engineering Problem Solving I

Credits 1

Analysis of data and numerical calculations including presentation of results of common civil engineering problems using Excel. Exposure to built-in functions, data presentation, solution techniques and macros will facilitate usage in other civil engineering classes.

Note
Two 75-minute lab meetings per week for one-half of an academic semester.

Repeat for Credit
N

Typically Offered
Fall

CE 202 - Civil Engineering Graphics

Credits 3

This course will include drafting, technical sketching, projective geometry, multiview drawings, reading and interpreting drawings, sectioning, dimensioning, and computer aided design (CAD) including 3D to produce basic civil engineering drawings.

Note
Two hours of lecture and three hours of lab per week.

Repeat for Credit
N

Typically Offered
Fall, Spring

CE 212 - Elementary Surveying Engineering

Credits 3

Coordinates, directions, distances, and elevation. transverse. boundary surveys. Leveling, national rectangular coordinate systems. property descriptions: public land subdivision and metes and bounds. Topographic surveys. surveying, planning, and estimating.

Note

Two hours of lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 150.

Typically Offered

Fall, Spring

CE 241 - Introduction to Civil Engineering Materials

Credits 3

Properties and behavior of structural metals, timber, portland cement concrete, and bituminous concrete; standard specification and methods of test; inspection and control. Topics support ACI Field Testing Technician certification.

Note

Two hours of lecture and three hours of lab per week.

Repeat for Credit

N

Typically Offered

Fall

CE 301 - Civil Engineering Problem Solving

Credits 1

Analysis of data and numerical calculations including presentation of results of common civil engineering problems using Mathcad. Exposure to built-in functions, data presentation, solution techniques, symbolic calculations and structured programming will facilitate usage in other civil engineering classes.

Note

Two 75-minute lab meetings per week over half of an academic semester.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in DEN 161.

Typically Offered

Spring

CE 331 - Strength of Materials and Analysis

Credits 3

Study of behavior of materials subjected to tension, compression, shear, and bending; analysis of beams and columns.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 231.

Typically Offered

Fall, Spring

CE 332 - Strength of Materials Laboratory

Credits 1

Tests to determine the physical properties of various structural materials. Analysis and interpretation of test data.

Note

Three hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CE 331.

Typically Offered

Fall, Spring

CE 333 - Statics

Credits 3

Composition and resolution of forces; equilibrium of force systems; application of general laws of statics to engineering problems, including use of vector algebra, friction and force analyses of simple structures, cables, and machine elements; center of gravity; moments of inertia.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221 and PHYS 213.

Typically Offered

Fall, Spring, Summer

CE 351 - Incompressible Fluid Mechanics**Credits 3**

Fundamentals of incompressible fluid mechanics and includes the topics of fluid properties; hydrostatics; applications of conservation of mass; energy and momentum equations; dimensional analysis; pipe flow; channel flow; and flow about immersed objects.

Repeat for Credit

N

Requisites

Prerequisites: "C" or better in CE 530 or "C" or better in ME 512

Typically Offered

Fall, Spring

CE 441 - Design of Civil Engineering Materials**Credits 3**

Apply principles first introduced in CE 241 to design of traditional and specialized concretes (such as high-performance concrete, self-compacting concrete, low-CO₂ concrete, internally-cured concrete, and RAP asphalt concrete); properties of concrete prepared using non-traditional cements; standardized testing to quantify long-term durability of concrete; planning experiments to minimize error variance and avoid bias.

Note

Two hours of lecture and three hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 241 and "C" or better in CE 534

Typically Offered

Spring

CE 497 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CE 499 - Honors Research in Civil Engineering**Credits 1-18**

Individual research problem selected with approval of faculty advisor. A report is presented orally and in writing during the last semester.

Note

Open to students in the College of Engineering honors program.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CE 501 - Project Economic Evaluation**Credits 1**

Provides fundamental concepts of engineering economics and decision-making process among alternative

engineering design and construction solutions through study of unit cost determination, cost estimating, and financing procedures.

Note

Two 50-minute lectures per week for half of an academic semester.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing for engineering majors or Senior standing for non-engineering majors.

Typically Offered

Spring

CE 502 - Project Management

Credits 1

Fundamental concepts of project management. Construction planning and scheduling methodologies will be introduced.

Note

Two 50-minute lectures per week for half of an academic semester.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing for engineering majors or Senior standing for non-engineering majors.

Typically Offered

Fall

CE 503 - Project Delivery

Credits 1

Fundamental concepts of project administration such as contracts, safety, and delivery methods. Construction project delivery methods such as Design-Bid-Build (DBB), Design-Build (DB), etc. will be discussed in detail and students will be introduced to construction estimating.

Note

Two 50-minute lectures per week for half of an academic semester.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing

Typically Offered

Spring

CE 522 - Soil Mechanics I

Credits 3

Identification, classification, and engineering properties of soils; theory and application of consolidation, compressibility, and strength of soils; ground water retention and movement; slope stability and lateral earth pressures; stress distribution in soil.

Note

Two hours of lecture and three hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in either CE 351 or ME 571 and "C" or better in CE 533.

Typically Offered

Fall, Spring

CE 528 - Foundation Engineering

Credits 3

Prediction of soil variation, soil investigations; stress distribution and bearing capacity; dewatering analysis and procedures; retaining structures and lateral earth pressures; shallow foundations, pile foundations; underpinning and grouting.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 522.

Typically Offered

Fall

CE 530 - Statics and Dynamics**Credits 3**

A shortened combined course in (1) statics, including a study of force systems, free-body diagrams, and problems in equilibrium, friction, centroids, and moments of inertia; and (2) dynamics, including a study of the kinematics and kinetics of particles and rigid bodies using the method of force-mass acceleration.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 222 and PHYS 213.

Typically Offered

Fall, Spring

CE 533 - Mechanics of Materials**Credits 3**

Elementary theories of stress and strain, behavior of materials, and applications of these theories and their generalizations to the study of stress distribution, deformation, and instability in the simple structural forms which occur most frequently in engineering practice.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 333 or "C" or better in CE 530

Typically Offered

Fall, Spring, Summer

CE 534 - Mechanics of Materials Laboratory**Credits 1**

Determination of selected mechanical properties of several engineering materials, including iron-carbon alloys, aluminum alloys, concrete, wood, and plastics; relationship between structure and mechanical properties of these materials; elementary problems in experimental stress analysis and structural behavior; test procedures, instrumentation, and interpretation of results.

Note

Three hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CE 533.

Typically Offered

Fall, Spring

CE 537 - Introduction to Structural Analysis**Credits 3**

Elastic analysis of determinate and indeterminate beams, frames, and trusses; construction of shear and moment diagrams and influence lines; calculation of deflections using conjugate beam and virtual work; solution of indeterminate structures by slope-deflection, moment distribution, and matrix stiffness method; with microcomputer applications.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 533.

Typically Offered

Fall, Spring, Summer

CE 542 - Structural Engineering in Steel**Credits 3**

Introduction to design of steel structures. Theoretical, experimental and practical bases for proportioning members and their connections.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 537.

Typically Offered

Spring

CE 544 - Structural Engineering in Concrete

Credits 3

A study of the theories of reinforced concrete and of its characteristics as a construction material; design of reinforced concrete structures.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 537.

Typically Offered

Fall

CE 550 - Water Resources Engineering

Credits 3

Introduction to: surface water hydrology, design of water handling structures, flood protection, pipe flow hydraulics, pump selection, and flow in soils.

Note

Two hours of lecture and three hours of lab per week. Not available for students with credit for BAE 560.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 213 and either STAT 510 or BAE 460

Typically Offered

Fall

CE 552 - Hydraulic Engineering

Credits 3

Applications of the principles of fluid mechanics to control and use of water; reservoir, dam, and spillway design; enclosed conduit and open-channel design; hydraulic machinery and hydro-power development; principles of fluid measurement; laboratory-flow and velocity metering, hydraulic models, pipe losses, open-channel flow.

Note

Two hours of lecture and three hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisites: "C" or better in either CE 351 or ME 571 and "C" or better in CE 550

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CE 563 - Environmental Engineering Fundamentals

Credits 3

Basic physical, chemical, and biological concepts and the applications to the protection of the environment with emphasis on techniques used in water and wastewater treatment.

Note

Two hours of lecture and three hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 210 and MATH 221

Typically Offered

Fall, Spring

Crosslisted

ENVE 363

CE 565 - Water and Wastewater Engineering

Credits 3

Design of municipal water and wastewater treatment systems.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 550, "C" or better in either CE 351 or ME 571, and "C" or better in CE 563

Typically Offered

Spring

CE 571 - Introduction to Transportation Engineering**Credits 3**

Key principles in transportation engineering and their relevance to practice. Consideration of both multi-modal and sustainable solutions to transportation.

Note

Two 75-minute lectures per week.

Repeat for Credit

N

Requisites

Prerequisites: MATH 221, PHYS 213, and "C" or better in CE 212.

Typically Offered

Spring

CE 572 - Highway Engineering**Credits 3**

Apply highway design principles first introduced in CE 571. Develop CAAD skills necessary to enter the engineering workforce. Plan and propose multiple alternatives for a highway alignment. Design new highway alignments and intersections. Consider earthwork and how it influences highway design. Introduce pavement design as it applies to highway alignments and intersections.

Note

Two 50-minute lectures and one two-hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 522 and "C" or better in CE 571.

Typically Offered

Fall

CE 585 - Civil Engineering Project**Credits 3**

A comprehensive civil engineering project. Requires integration of skills acquired in civil engineering elective courses. Students must prepare and present written and oral design reports.

Note

One hour of lecture and six hours of lab per week. Students take CE 585 during their last planned semester of their B.S. program.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 415 and "C" or better in two 3-hour CE design electives. Prerequisite or concurrent enrollment in the remaining required CE design electives. Students take CE 585 during their last planned semester of their B.S. program.

Typically Offered

Fall, Spring

CE 625 - Principles of Geoenvironmental Engineering**Credits 3**

Introduction to soil formation, structure, flow and mass transport in soils, mass transfer principles, waste containment and isolation, and physical, chemical, and biological remediation principles.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: CE 522.

Typically Offered

Spring

CE 654 - Design of Groundwater Flow Systems

Credits 3

Introduction to fundamental, mathematical and physical concepts of groundwater flow; application of simple analytic models; introduction to field methods; application of computer modeling tools to address design with practical significance.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: CE 351 or ME 571

Typically Offered

Fall

CE 663 - Unit Operations and Processes in Environmental Engineering

Credits 2

A laboratory study of various physical, chemical and biological operations and processes used in the professional practice of environmental engineering. Topics covered will be selected from reactor hydrodynamics, oxidation-reduction, coagulation-flocculation, chemical precipitation, ion exchange, adsorption processes, biological oxidation, anaerobic digestion and the activated-sludge process.

Note

Six hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CE 565 and CE 552.

Typically Offered

Spring-Even Years

CE 680 - Economics of Design and Construction

Credits 3

Selection of alternative engineering design and construction solutions through study of unit cost determination, cost estimating, and financing procedures. Introduction to construction scheduling.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing in engineering or graduate standing for non-engineering majors.

Typically Offered

Spring

CE 690 - Selected Topics in Civil Engineering

Credits 0-18

Selected topics within a speciality area of civil engineering that will be offered when there is sufficient demand.

Note

Approval of instructor.

Repeat for Credit

Y

Typically Offered

Fall

CE 703 - Responsibility in Engineering: Codes & Professionalism

Credits 3

Course designed to help engineers, scientists, and technical managers to: understand fundamental "canons" of professional societies, establish or revitalize personal ethical standards using these canons, realize when situations are ethical dilemmas, and to develop a process to

solving dilemmas. Key activities are: interviewing peers, analyzing current environment for potential challenges, developing ethics workshops, and writing individual code of ethics.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing or senior with instructor approval.

Typically Offered

Spring

CE 704 - Responsibility in Engineering: Leadership & Diversity

Credits 3

Course designed to help engineers, scientists, and technical managers to: understand leadership approaches that promote high ethical conduct, and to understand the ethical value and challenges associated with a diverse workplace. Key activities are: interviewing peers; analyzing current environment for potential challenges; developing a workshop related to ethics, leadership and diversity; and writing individual code of ethics.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing or instructor approval.

Typically Offered

Fall

CE 718 - Engineering Photo Interpretation

Credits 3

Photo interpretation techniques, types of aerial photographic film and their uses; application in land use studies, land surveying, site selection, rainfall runoff and stream flow, location of construction materials, and in the determination of soil properties; other applications.

Note

Two hours recitation and three hours lab a week. Consent of instructor.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing

Typically Offered

Spring

CE 723 - Designing with Geosynthetics

Credits 3

History of geosynthetics; overview of geosynthetic functions, applications and properties; relationship between testing and applications. Designing with geotextiles, geogrids, geonets, geomembranes, geosynthetic clay liners and geocomposites.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 522.

Typically Offered

Other

CE 725 - Seepage in Permeable Materials

Credits 3

Analysis of seepage; groundwater movement in slopes, embankments, dams, and earth-supporting structures; construction of flow nets; dewatering systems; filter and drain design.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 522 and CE 552.

Typically Offered

Other

CE 728 - Advanced Geotechnical Design

Credits 3

Advanced studies of soil investigations; design of retaining structures and reinforced earth walls, sheet piles, anchored bulkheads, underground conduits and tunnels; analysis and repair of failed structures.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 528.

Typically Offered

Spring

CE 732 - Advanced Structural Analysis I**Credits 3**

Plane truss and frame analysis by direct stiffness method; equivalent nodal forces; thermal and settlement effects; stiffness by energy methods; analysis of space frames and trusses; grid structures; advanced topics.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 537.

Typically Offered

Fall

CE 741 - Civil Engineering Materials II**Credits 3**

Advanced study of civil engineering materials including concrete, steel and bituminous concrete.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 541 or CHE 350.

Typically Offered

Spring

CE 742 - Advanced Steel Design**Credits 3**

Plastic design of steel structures; stability problems in plastic design; design of complex steel structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 542.

Typically Offered

Spring

CE 743 - Advanced Reinforced Concrete Design**Credits 3**

Advanced methods of analysis and design of reinforced concrete members and structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 544 or equivalent

Typically Offered

Spring

CE 745 - Structural Dynamics**Credits 3**

Introduction to fundamental concepts in structural dynamics; free and forced vibration of single and multiple degrees of freedom systems with and without damping, numerical methods for linear and non-linear dynamic

analysis, and basics of the earthquake response and design of structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340, ME 512, CE 537 or equivalent.

Typically Offered

Fall

CE 751 - Hydraulics of Open Channels

Credits 3

Properties of open-channel flow; types of open channels; conservation of mass, momentum, and energy; critical, uniform, and gradually varied flow; design of erodible channels; rapidly varied flow.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 552.

Typically Offered

Fall

CE 752 - Advanced Hydrology

Credits 3

Review of basic principles; point and regional rainfall and flood frequency analyses; hydrologic and hydraulic flood routing; drainage and flood control facilities design; hydrologic modeling and simulation flood plain analysis and planning.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 550.

Typically Offered

Fall

CE 760 - Environmental Engineering Seminar

Credits 0

Discussion of current advances in research and practice of environmental engineering.

Note

One hour of seminar biweekly.

Repeat for Credit

Y

Typically Offered

Fall, Spring

Crosslisted

BAE 760

CE 762 - Water Treatment Processes

Credits 3

Physical and chemical process principles and their application to water treatment plant design.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CE 565.

Typically Offered

Spring

CE 766 - Wastewater Engineering: Biological Processes

Credits 3

Biological process principles and their application to the design of wastewater treatment plants.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CE 565.

Typically Offered

Fall

CE 768 - Geoenvironmental Engineering Design**Credits 3**

A team design project in geoenvironmental engineering focused on resolving interdisciplinary issues related to containment of pollutants and remediation of soil and groundwater.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: one of the following: AGRON 605, AGRON 746, BAE 690, CE 625, CE 654, CHE 531 or GEOL 611.

Typically Offered

Spring

Crosslisted

BAE 768, CHE 768

CE 771 - Travel Demand Modeling**Credits 3**

Historical development and current status of techniques used in urban transportation planning and travel demand forecasting; trip generation, trip distribution, mode choice, and traffic assignment.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 572 or consent of instructor.

Typically Offered

Spring

CE 774 - Pavement Design**Credits 3**

Methods of evaluating the load-carrying capacity of soil subgrade, subbase, and base courses; critical analysis of the methods of design for flexible and rigid pavements; methods of increasing the load-carrying capacity of highway and airport pavements.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 522.

Typically Offered

Fall

CE 775 - Traffic Engineering**Credits 3**

Traffic operations of roads, streets, and highways; traffic engineering studies; use of signs, signals, and pavement markings as traffic control devices; highway and intersection capacity, design and operations of traffic signals; current microcomputer models and applications.

Repeat for Credit

N

Requisites

Prerequisite: "C" or better in CE 572.

Typically Offered

Spring

CE 777 - Portland Cement Concrete Pavements**Credits 3**

Portland cement concrete mix design and production. Paving operations. Saw and seal operations. Subgrade preparation. Base selection. Drainage selection, design and

construction. Bonded and unbonded concrete overlays. Whitetopping and Ultra-Thin Whitetopping. Concrete pavement restoration; Quality Assurance and Quality Control in Concrete Pavement Construction.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 541.

Typically Offered

Spring

CE 778 - Geotechnics and Advanced Pavement Design

Credits 3

Geotechnical aspects of mechanistic-empirical pavement design (MEPDG). Material characterization in MEPDG. Models relating mechanistic pavement responses to pavement performance. Applications of current mechanistic-empirical design methods.

Repeat for Credit

N

Requisites

Prereq: CE 774 or Instructor Permission

Typically Offered

Fall

CE 786 - Land Development for Civil Engineers and Planners

Credits 3

Engineering problems involved in site planning and design. The comprehensive planning process, zoning and subdivision regulations; design and location of streets and highways, water supply and sanitary facilities, drainage and public utilities.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 572 or consent of instructor.

Typically Offered

Fall

CE 790 - Problems in Civil Engineering

Credits 1-18

Problems in Civil Engineering

Note

Approval of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CE 791 - Research in Civil Engineering

Credits 1-18

Original investigation or advanced study in some field related to the practice of civil engineering.

Note

Approval of department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CE 802 - Advanced Mechanics of Materials and Applied Elasticity

Credits 3

Two- and three-dimensional deformation analysis, equilibrium, and elastic constitutive laws. Stress-strain transformations between coordinate systems. Advanced topics in bending, shearing, torsion and combined loads, with applications to engineering problems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 533.

Typically Offered

Fall-Odd Years

Crosslisted

ME 802

CE 803 - Numerical and Analytic Techniques for Engineers

Credits 3

Theory and application of linear algebra, differentiation, integration, optimization and complex variables to a broad range of engineering problems; introduction to solving partial differential equations using finite difference, finite element and boundary element methods.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 340.

Typically Offered

Fall

CE 807 - Applied Geostatistics

Credits 2

Analysis of spatially-correlated data. Univariate, bivariate, and spatial description; global and point estimation; random function models; stationarity; intrinsic hypothesis; semivariogram; correlogram; ordinary and block kriging; cross validation; cross correlation and cokriging; experimental design.

Note

One hour lecture and one hour computer lab a day.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 510 or STAT 703.

Typically Offered

Intersession

Crosslisted

AGRON 807

CE 816 - Selected Topics in Civil Engineering

Credits 1-18

Study of intermediate level topics of interest in civil engineering. Topics announced when offered.

Note

Instructor approval

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing

Typically Offered

Fall, Spring, Summer

CE 822 - Shear Strength and Slope Stability of Soils

Credits 3

Advanced theories of soil strength and failure; soil improvement; theories of lateral earth pressure with applications; stability analysis by both classical and numerical methods. Selected soil mechanics laboratory project.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 728.

Typically Offered

Other

CE 823 - Engineering Properties of Cohesive Soils

Credits 3

Mineralogy and structures of clay minerals; fabric and bonding of the clay particles; compressibility and strength characteristics of clays; moisture effects, retention, and movement through clay.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 522 and CE 725.

Typically Offered

Fall

CE 824 - Strength and Deformation of Geomaterials**Credits 3**

Mathematical and physical modeling in geotechnical engineering. Advanced laboratory testing of soils. Plasticity, dilatancy, failure and critical state. Finite element applications: Laboratory strength tests and/or simple field problems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 522 or equivalent.

Typically Offered

Other

CE 825 - Environmental Geotechnology**Credits 3**

Soil/environment and soil/ pollutant interactions; pollutant effect on soil strength and behavior; design and performance of waste containment structures; clay liners, surface seals, and slurry walls; slope stability problems for landfills.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 725.

Typically Offered

Other

CE 827 - Computational Applications in Geosystems**Credits 3**

The application of finite element method to multi-physics and pressure dependent materials such as soils, rock, concrete and asphalt. Course covers the formulation of 1D element, overview of elasticity (isotropic and anisotropic), theory of plasticity (modified Cam Clay and Drucker-Prager models), which is followed by applications such as stresses in the soil, shear strength, consolidation, shallow and deep foundations, retaining walls, mechanically stabilized earth and groundwater seepage.

Repeat for Credit

N

Requisites

Prerequisite: CE 522

Typically Offered

Spring

CE 828 - Advanced Seepage and Settlement Analysis in Soils**Credits 3**

Permeability and seepage analysis involving dams and sheet piles; stress distribution in earth masses, one- and three-dimensional consolidation theories; advanced study of compressibility of soil, numerical method applications in consolidation and seepage; analysis of settlement. Selected soil mechanics laboratory project.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 522 and CE 802.

Typically Offered

Other

CE 833 - Advanced Structural Analysis II**Credits 3**

Nonlinear structural analysis using classical solutions; nonlinear geometry analysis by matrix methods for trusses and frames; nonlinear material analysis by matrix methods for trusses and frames; solution of nonlinear equilibrium equations; modeling structural problems by commercial software to predict ultimate capacity and nonlinear response.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 732 or equivalent.

Typically Offered

Spring

CE 834 - Strengthening Design of Reinforced Concrete with Fiber Reinforced Polymers**Credits 3**

The course introduces advanced aspects of the analysis and design of reinforced concrete beams and columns (3 weeks), it then covers the mechanical properties of FRP composites used in CE applications (2 weeks), it then covers the flexural strengthening analysis and design of reinforced concrete beams with FRP including the formulation for various failure modes (5 weeks), it then addresses the shear strengthening analysis and design of reinforced concrete beams with FRP (2 weeks), it then covers the strengthening and FRP wrapping of reinforced concrete columns with FRP (3 weeks) and finally it describes the practical methods of the proper installation and inspection of FRP (1 week).

Repeat for Credit

N

Requisites

Prerequisite: CE 544

Typically Offered

Spring

CE 836 - Energy Methods and Applied Variational Principles**Credits 3**

Theory and applications of virtual work, minimum potential, and variational principles using generalized coordinates, displacements, and forces to derive and solve advanced problems in structural, soil and hydrodynamic problems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 801.

Typically Offered

Other

CE 837 - Structural Stability**Credits 3**

Analysis of flexible members. Linear and nonlinear buckling of beams, frames, plates and complicated structural systems; post buckling behavior of steel structures.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 802.

Typically Offered

Spring

CE 844 - Prestressed Concrete Design**Credits 3**

Study of prestressing methods including strength and load-balancing approaches and their application to the analysis and design of beams, slabs, and axially loaded members. Flexural, shear, torsion, and anchorage-zone analysis. Study of deflection and time-dependent losses.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 544.

Typically Offered

Fall

CE 854 - Analysis of Groundwater Flow

Credits 3

Principles of flow through porous media; applications of flow theory to well analysis and design; groundwater resource evaluation and regional groundwater systems analysis.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 552.

Typically Offered

Spring

CE 857 - Advanced Civil Engineering Design Using GIS

Credits 3

Investigating the usage of Geographic Information Systems (GIS) technology to better solve engineering problems. Teams of students will use GIS to design solutions to various civil engineering related situations.

Note

Instructor approval

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing

Typically Offered

Spring

CE 861 - Environmental Engineering Chemistry

Credits 3

Chemical kinetics and equilibria, acid-base chemistry, complex formation, precipitation and dissolution processes, and applications to the analysis of environmental engineering problems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 565, CE 762.

Typically Offered

Fall

CE 866 - Advanced Wastewater Treatment

Credits 3

Recent advances in municipal and industrial wastewater treatment. Wastewater microbiology, wastewater biochemistry, applications of biotechnology in wastewater engineering, recent advances in nutrient removal processes, wastewater treatment technologies, and water reclamation.

Note

Three hours recitation.

Repeat for Credit

Y

Requisites

Prerequisite: CE 766.

Typically Offered

Spring

CE 867 - Advance Environmental Microbiology and Techniques

Credits 3

Provides a general introduction to the diverse roles of microorganisms in natural and artificial environments, and their engineering applications. Topics including fundamentals of microbiology, microbial growth and metabolism, microbiology of engineered environmental systems, and laboratory techniques relevant to environmental microbiology are covered..

Repeat for Credit

N

Requisites

Prerequisite: (BIOL 198 and CE 563) or Consent of Instructor

Typically Offered

Spring-Even Years

CE 868 - Chemicals in the Environment: Fate and Transport

Credits 3

Provides an understanding of processes that govern the behavior of both hazardous and naturally-occurring substances in the environment. Mass transport (such as advection, dispersion, and diffusion), surface and groundwater hydrology, physical/chemical/biological degradation processes, and air pollution modeling are covered. Phase equilibrium and partitioning in environmental systems will be discussed as well as interphase mass transfer and modeling.

Repeat for Credit

N

Requisites

CE 563 or Consent of Instructor

Typically Offered

Spring-Odd Years

CE 872 - Transportation Safety

Credits 3

Importance of transportation safety, crash data collection, common crash databases, traffic safety studies, accident

data analysis, identification of high crash locations, traffic control devices as related to safety, special population group safety, traffic conflict studies, accident reconstruction, statistical methods in crash data analysis and traffic calming.

Note

Three hours recitation per week. Consent of instructor.

Repeat for Credit

Y

Requisites

Prerequisite: CE 572

Typically Offered

Other

CE 873 - Airport Design

Credits 3

Planning and design of a regional airport, including site selection in conformance with state and federal regulations; layout and design of runway system; size and layout of terminal buildings, landside facilities, parking lots, and circulation system.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 572.

Typically Offered

Spring

CE 874 - Sustainable Transportation Asset Management

Credits 3

Recent advances in transportation asset management system. Inventory and condition data collection, life cycle analysis, prioritization, optimization, and implementation.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 774 or equivalent.

Typically Offered

Other

CE 875 - Traffic Flow Theory

Credits 3

Theory of traffic flow, traffic stream characteristics, car following models, shock wave analysis, queuing analysis, application of statistical methods to traffic engineering problems, traffic simulation.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 775. Prerequisite or concurrent enrollment: STAT 510.

Typically Offered

Spring

CE 890 - Graduate Seminar in Civil Engineering

Credits 0

Discussion of current advances and research in civil engineering.

Note

One hour seminar biweekly.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CE 898 - Master's Report

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CE 899 - Master's Thesis

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CE 916 - Advanced Topics in Civil Engineering

Credits 1-18

A course reserved for study of current topics in civil engineering.

Note

Eighteen hours graduate credit in areas approved by instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CE 930 - Advanced Topics in Geotechnical Engineering

Credits 1-18

Advanced study of selected topics in geotechnical engineering.

Note

Eighteen hours graduate credit in areas approved by instructor.

Repeat for Credit

Y

Typically Offered
Fall, Spring

CE 935 - Structural Dynamics II

Credits 3

Analysis of structures subject to dynamic loadings.
Optimization of structural systems to minimize earthquake hazards.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: CE 802.

Typically Offered
Other

CE 938 - Theory of Plates and Shells

Credits 3

Equations and solutions of bending of thin plates of various edge conditions and shapes. Membrane and bending theory of shells of revolution. Nonlinear theory of plates and shells.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: CE 802.

Typically Offered
Other

CE 950 - Advanced Topics in Structural Engineering

Credits 1-18

Advanced study of selected topics in structural engineering.

Note

Eighteen hours graduate credit in areas approved by the instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring

CE 967 - Physicochemical Processes

Credits 3

Advanced study of physical and chemical processes in the movement and removal of particulates and organics in natural and engineered systems.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: CE 861.

Typically Offered
Other

CE 970 - Advanced Topics in Environmental and Water Resources Engineering

Credits 1-18

Advanced study of selected topics in environmental and water resources engineering.

Note
Eighteen hours graduate credit in areas approved by the instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring

CE 980 - Advanced Topics in Transportation and Materials Engineering

Credits 0-18

Advanced study of selected topics in transportation engineering and civil engineering materials.

Note

Eighteen hours graduate credit in areas approved by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CE 999 - Dissertation Research

Credits 1-18

Topics selected with approval of major professor and department head. Doctor of veterinary medicine degree only.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CFT 824 - Parent-Child Interaction: Theory and Research

Credits 3

Developmental theories and empirical research concerning the reciprocal interactions between parents and their children focusing on the socialization of the child within the family.

Repeat for Credit

Y

Typically Offered

Summer

CFT 853 - Family Systems in Cultural Context

Credits 3

Helps students integrate an understanding of individuals, couples, and families within the context of culture. Helps participants to listen and respond in a thoughtful and sensitive manner to the individuals and families they serve professionally, especially those from diverse cultural backgrounds. Students will become more aware of their

own cultural memberships, and develop a framework for appreciating the cultural context of the profession of family therapy.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program and/or instructor's consent.

Typically Offered

Spring

CFT 864 - Clinical Theory and Practice A

Credits 3

Introduction to the foundation of family therapy. A survey of the first half of major schools of family therapy.

Repeat for Credit

Y

Requisites

Pre-requisite: Admission to the CFT program and/or instructor's consent.

Typically Offered

Fall

CFT 865 - Human Sexuality

Credits 3

Focus on implications of personal and familial aspects of human sexuality throughout the life cycle.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

CFT 866 - Sex Therapy

Credits 3

A focus on the framework and skills for delivering therapy to individuals and couples experiencing difficulties with their own sexuality or with sexual functioning in their relationships.

Repeat for Credit

Y

Typically Offered

Fall

CFT 867 - Pre-Practicum in Couple and Family Therapy**Credits 3**

Introduction to master's program in couple and family therapy, including clinic policies and clinical observations. Restricted to students admitted to the couple and family therapy program.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the CFT program and/or instructor's consent.

Typically Offered

Fall

CFT 868 - Pre-Practicum in Couple and Family Therapy II**Credits 1**

Preparation for screening into the clinical practicum in couple and family therapy and participation in clinic research program.

Repeat for Credit

Y

Requisites

Prerequisite: CFT 867 and concurrent enrollment in CFT 870.

Typically Offered

Spring

CFT 869 - Systematic Treatment of Trauma Violence and Substance Abuse**Credits 3**

Framework and skills for helping individuals and families experiencing domestic violence and/or substance abuse

with emphasis on assessment and treatment.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the CFT program and/or instructor consent.

Typically Offered

Fall

CFT 870 - Couples and Sex Therapy**Credits 3**

Examination of couple processes and clinical approaches to couple intervention and treatment, including evidence based approaches. The course will include a specific focus on contextual and systemic dynamics affecting couple relationships as well as the treatment of couples experiencing difficulties with their own sexuality or with sexual functioning in their relationships.

Repeat for Credit

Y

Requisites

Pre-requisite: Admission to the CFT program or instructor approval.

Typically Offered

Spring

CFT 872 - Family Therapy**Credits 3**

Discussion of the primary theories of Couple and Family Therapy which are used in the treatment of whole families who present themselves for therapy.

Repeat for Credit

N

Requisites

Pre-requisite: Admission to the CFT program or instructor approval

Typically Offered

Spring

CFT 877 - Individual and Family Assessment

Credits 2

Assessment of individual and family functioning within multiple contexts; including an emphasis on client focused progress monitoring.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval

Typically Offered

Fall

CFT 878 - Professional Studies in Family Therapy**Credits 3**

Analysis of professional issues, techniques, and responsibilities associated with working effectively with families in a family therapy setting.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval.

Typically Offered

Spring

CFT 879 - Systemic Assessment and Treatment of Psychopathology**Credits 3**

Examination of the Diagnostic and Statistical Manual of Mental Disorders. Exploration of relational diagnoses and the interaction of individual disorders and relational functioning. Review of empirically supported treatments for individual and relational disorders.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor

approval.

Typically Offered

Spring

CFT 885 - Practicum in Couple and Family Therapy**Credits 1-3**

Supervised experience in couple and family therapy. Designed for master's level students.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval

Typically Offered

Fall, Spring, Summer

CFT 886 - Clinical Intervention with Parents and Children**Credits 3**

The course will examine the history of play therapy including the theories from which play therapy evolved, attachment theory, the fundamentals of play therapy, use of assessment with children and adolescents, sand tray play therapy, use of play therapy in the family context and special topics.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the CFT program or instructor approval.

Typically Offered

Fall

CFT 889 - Clinical Project**Credits 1-3**

Integration of clinical work and course work resulting in a final clinical project.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CFT 894 - Readings in Couple and Family Therapy**Credits 1-6**

Implications of research findings in preparation for professional work in counseling, teaching, and research in couple and family therapy.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CFT 896 - Clinical Theory and Practice B**Credits 3**

A survey of the second half of major schools of family therapy.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval.

Typically Offered

Fall

CFT 899 - MS Research in Couple and Family Therapy**Credits 1-6**

Individual research problems in couple and family therapy which may form the basis for the master's thesis or report.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CFT 910 - Topics in Couple and Family Therapy**Credits 1-3**

Examination of recent research, theory, and clinical practice related to couple and family therapy.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval

Typically Offered

Fall, Spring

CFT 970 - Specialization and Leadership**Credits 3**

Seminar focusing on the development of specialization in research, teaching, and applied work.

Repeat for Credit

Y

Typically Offered

Fall-Even Years

CFT 982 - Practicum in CFT Research**Credits 1-3**

Student will work with a faculty member to complete a research project and submit it to a journal.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the CFT program or instructor approval.

Typically Offered

Fall, Spring, Summer

CFT 983 - Advanced Family Research Methods

Credits 3

Analysis of a variety of family research methods.

Repeat for Credit

Y

Typically Offered

Other

CFT 984 - Supervision of Couple and Family Therapy

Credits 3

Preparation of experienced couple and family therapists for supervision roles within educational, medical and agency settings.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval. Corequisite: CFT 986

Typically Offered

Other

CFT 985 - PhD Practicum in Couple and Family Therapy

Credits 1-3

Supervised experience in family therapy.

Note

Consent of instructor is required.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval

Typically Offered

Fall, Spring, Summer

CFT 986 - Practicum in Supervision in Couple and Family Therapy

Credits 1-3

Supervised experience in supervision of couple and family therapy.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the CFT program or instructor approval.

Typically Offered

Fall, Spring, Summer

CFT 987 - Advanced Clinical Theory

Credits 3

Exploration of couple and family therapy clinical theories and the process of integrating these theories into a personalized model for utilization in both therapy and supervision.

Repeat for Credit

Y

Requisites

Prerequisite: CFT 870 and CFT 896.

Typically Offered

Other

CFT 988 - Conjoint and Group Techniques in Family Counseling

Credits 3

Advanced theory in couple and family counseling with emphasis on group techniques.

Repeat for Credit

Y

Requisites

Prerequisite: CFT 885 and consent of instructor.

Typically Offered

Spring, Summer

CFT 990 - Dissertation Proposal Seminar

Credits 1

Presentation and discussion of proposals for dissertation research in human development and family science.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of statistics, 3 hours of research design or methods, and consent of major professor.

Typically Offered

Fall, Spring, Summer

CFT 999 - Doctoral Research in Couple and Family Therapy

Credits 1-18

Doctoral Research in Couple and Family Therapy

Repeat for Credit

Y

Typically Offered

Other

CHE 015 - Engineering Assembly

Credits 0

Engineering Assembly

Repeat for Credit

Y

Typically Offered

Fall, Spring

CHE 110 - Current Topics in Chemical Engineering

Credits 1

Recent advances in chemical engineering and the impact of the profession on society.

Note

One hour lecture per week.

Repeat for Credit

N

Typically Offered

On sufficient demand

CHE 320 - Chemical Process Analysis

Credits 3

An introduction to chemical engineering with emphasis on material and energy balances.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: CHM 230 or CHM 250 and MATH 222.

Typically Offered

Fall, Spring

CHE 354 - Basic Concepts in Materials Science and Engineering

Credits 1

Structure of materials with crystal structures of metals and their defects emphasized. Two component phase diagrams, multiphase equilibrium, and the microstructures that result.

Note

Three hours lecture a week for 5 weeks.

Repeat for Credit

N

Requisites

Prerequisite: CHM 210, prerequisite or corequisite: PHYS 213.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

CHE 355 - Fundamentals of Mechanical Properties

Credits 1

Overview of the mechanical properties of materials, especially metals, and the modification of these properties through changes in microstructure. Effect of heat treatment on microstructure and mechanical properties.

Note

Three hours lecture a week for 5 weeks.

Repeat for Credit

N

Requisites

Prerequisite: CHE 354.

Typically Offered

Fall, Spring

CHE 356 - Fundamentals of Electrical Properties

Credits 1

Overview of the electrical properties of materials including conductors, semiconductors, and dielectrics, and their basis in the band theory of solids. Multiphase equilibrium and modification of properties through changes in microstructure.

Note

Three hours lecture a week for 5 weeks.

Repeat for Credit

N

Requisites

Prerequisite: CHE 354.

Typically Offered

Fall, Spring

CHE 416 - Computational Techniques in Chemical Engineering

Credits 3

Use of computational techniques in chemical engineering.

Note

Two hours lecture and two hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 320.

Typically Offered

Fall, Spring

CHE 417 - Computational Techniques in Chemical Engineering II

Credits 3

Application and reinforcement of principles and concepts for problem-solving chemical engineering challenges using mathematical models and numerical methods. Computational tools and software packages covered in the course include Python and/or MatLab and the chemical process simulator Aspen Plus.

Repeat for Credit

N

Requisites

Prerequisite: CHE 416 Co-requisite: CHE 521

Typically Offered

Spring

CHE 430 - Biomaterials

Credits 3

This course provides an overview of interactions between materials and biological systems, techniques to assess biomaterial characteristics, and the role of biomaterial selection during the design of medical devices for select applications.

Note

2 hours lecture; 3 hours laboratory

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and CHM 230

Typically Offered

Fall

Crosslisted
BME 430

CHE 497 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research project.

Repeat for Credit
Y

Typically Offered
Fall, Spring

CHE 499 - Honors Research in Chemical Engineering

Credits 1-6

Individual research problem selected with approval of faculty advisor. Open to students in the College of Engineering honors program. A report is presented orally and in writing during the last semester.

Repeat for Credit
Y

Typically Offered
Fall, Spring

CHE 520 - Chemical Engineering Thermodynamics I

Credits 2

A study of the first and second laws of thermodynamics, real gases, heat of solution and reaction.

Note
Two hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: A grade of C or better in CHE 320.
Prerequisite or concurrent enrollment: MATH 340.

Typically Offered
Spring

CHE 521 - Chemical Engineering Thermodynamics II

Credits 3

A continuation of the study of the second law, thermodynamic analysis of processes, phase equilibrium, and chemical reaction equilibrium.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite or concurrent enrollment: CHE 416 and CHM 531. Prerequisite: CHE 520.

Typically Offered
Fall

CHE 530 - Transport Phenomena I

Credits 3

A unified treatment of the basic principles of momentum, energy, and mass transport.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: A grade of C or better in CHE 320 and MATH 340.

Typically Offered
Fall

CHE 531 - Transport Phenomena II

Credits 3

Continuation of Transport Phenomena I with special emphasis on mass transfer.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CHE 416.

Prerequisite: CHE 530.

Typically Offered

Spring

CHE 535 - Transport Phenomena Laboratory

Credits 3

Laboratory experiments in momentum, heat, and mass transfer.

Note

Eight hours of laboratory per week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CHE 531.

Typically Offered

Spring

CHE 542 - Unit Operations Laboratory

Credits 3

Laboratory experiments on classical unit operations, e. g., distillation, absorption, extraction, and on chemical kinetics and process dynamics.

Note

Eight hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 535, CHE 550 and CHE 560.

Prerequisite or concurrent enrollment: CHE 561.

Typically Offered

Spring

CHE 550 - Chemical Reaction Engineering

Credits 3

Applied chemical kinetics and catalysis including the analysis and design of tubular, packed bed, stirred tank, and fluidized bed chemical reactors.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 521 and CHE 531.

Typically Offered

Fall

CHE 560 - Separational Process Design

Credits 3

Development of the basic theory and design of separational processes such as distillation, gas absorption, liquid extraction, adsorption, and ion exchange.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 521 and CHE 531.

Typically Offered

Fall

CHE 561 - Chemical Process Dynamics and Control

Credits 3

A study of the unsteady state behavior and control of chemical processes.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 550 and 416.

Typically Offered

Spring

CHE 565 - Health and Safety in Chemical Engineering

Credits 3

Fundamentals of chemical process safety, particularly as they apply to process design. Topics will include toxicology and industrial hygiene, fires and explosions, runaway reactions, relief systems, process hazards identification, risk assessment, and inherently safer design.

Repeat for Credit

N

Requisites

Corequisite: CHE 570.

Typically Offered

Fall

CHE 570 - Chemical Engineering Systems Design I

Credits 3

Basic concepts of process economics and process optimization with application to the synthesis and design of chemical processing systems.

Repeat for Credit

N

Requisites

Corequisite: CHE 550 and CHE 560.

Typically Offered

Fall

CHE 571 - Chemical Engineering Systems Design II

Credits 3

The solution of comprehensive systems design problems.

Repeat for Credit

N

Requisites

Prerequisite: CHE 550, CHE 560, and 570. Corequisite: CHE 561.

Typically Offered

Spring

CHE 580 - Problems in Chemical Engineering or Materials Science

Credits 1-18

An introduction to chemical engineering research.

Note

Approval of department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHE 626 - Bioseparations

Credits 3

Study of separations important in food and biochemical engineering such as leaching, extraction, expression, absorption, ion exchange, filtration, centrifugation, membrane separation, and chromatographic separations.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 531 or BAE 545.

Typically Offered

Spring-Even Years

CHE 631 - Nanotechnology in Chemical Engineering

Credits 3

This course has been taught as a topics course, and will

now be given a specific course number for its future offerings.

Repeat for Credit

N

Requisites

Senior undergraduate or graduate standing in engineering, or permission of the instructor. It will be assumed that the student has been exposed to basic materials science.

Typically Offered

On sufficient demand

CHE 632 - Molecular Modeling**Credits 3**

This course focuses on introducing basic concepts in chemical engineering and chemistry related to thermodynamics, Kinetics, Chemistry, Surface Science, Catalysis, Materials Science in the context of molecular-level modeling. Students will also gain hands-on experience in using common simulation tools and high-performance computing.

Repeat for Credit

N

Requisites

Prerequisites: CHM 585 OR CHM 595, CHE 354, CHE 355, CHE 356, and CHE 521, OR instructor permission.

Typically Offered

On sufficient demand

CHE 633 - Microbial Biotechnology**Credits 3**

Continued advancements in microbiology have enabled the ability to use microorganisms for engineering applications. Thus, microbial biotechnology is a rapidly expanding area that has potential to improve agriculture productivity, provide renewable sources of energy, and improve the health of plants, animals, and humans, among other applications. This course will highlight these research areas and will emphasize chemical engineering concepts found within these systems.

Repeat for Credit

N

Requisites

Pre-Req: CHE 320 OR BAE 445 OR instructor permission

Typically Offered

On sufficient demand

CHE 642 - Fundamentals of Conversion of Biorenewable Resources**Credits 3**

An introduction to the conversion of biorenewable resources into biobased products and biofuels.

Note

Three hours of recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220 and CHM 230.

Typically Offered

On sufficient demand

Crosslisted

BAE 642

CHE 643 - Life Cycle Assessment**Credits 3**

Introduction to the life cycle assessment methodology for quantifying environmental impacts of products, processes, and systems. Topics include life cycle methodology, data inventory process and databases, life cycle impact modeling approaches and software, uncertainty quantification, and practical applications to demonstrate life cycle assessment as a tool for making decisions to improve sustainability of materials, products, and system

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: Math 220 and either CHM 230 or CHM 250.

Typically Offered

Spring

Crosslisted

BAE 643

CHE 650 - Hazardous Waste Engineering Seminar

Credits 1

Topics in hazardous materials management and control, waste reduction and minimization, hazardous substance tracking, and hazardous waste engineering.

Note

One hour recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 230.

Typically Offered

Fall, Spring, Summer

CHE 656 - Polymer Science and Engineering

Credits 3

An introduction to polymeric materials, including chemistry, structure and formation; physical states and transitions; and, basic physical and mechanical properties.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 531.

Typically Offered

Fall-Even Years

CHE 661 - Processing of Materials for Solid State Devices

Credits 3

Structure, properties and processing of materials for solid

state devices. Crystal growth, epitaxy, oxidation, diffusion, lithography, and etching as applied to device fabrication.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 350 or CHE 352.

Typically Offered

Fall, Spring

CHE 663 - Environmental and Ecological Risk Assessment

Credits 3

Examination of processes and methodologies associated with human environmental and ecological risk assessments. Application of the methods learned to a project to gain experience in defining and quantifying uncertainty associated with human perturbation, management and restoration of environmental and ecological processes.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221 and BIOL 255.

Typically Offered

On sufficient demand

Crosslisted

BAE 663

CHE 670 - Sustainability Seminar

Credits 1

Topics in environmental sustainability, green engineering, life cycle analysis, sustainable development, and sustainability science.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 230.

Typically Offered

Fall, Spring, Summer

CHE 681 - Engineering Materials II**Credits 3**

The structure and bonding in crystalline and amorphous materials; crystallography; thermodynamic stability in materials; equilibrium diagrams and the phase rule; rate theory and kinetics of solid-state transformations; mechanical behavior of engineering materials; dislocations; failure mechanisms.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 350 or CHE 352.

Typically Offered

Fall, Spring, Summer

CHE 682 - Surface Phenomena**Credits 3**

Principles and applications of interfacial phenomena, including capillarity, colloids, porosity, adsorption, and catalysis.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 520, CHM 585, ME 513, or PHYS 664.

Typically Offered

Fall-Odd Years

CHE 715 - Biochemical Engineering**Credits 3**

The analysis and design of biochemical processing systems with emphasis on fermentation kinetics, continuous fermentations, aeration, agitation, scale up, sterilization, and control.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CHE 550.

Typically Offered

Fall

CHE 750 - Air Quality Seminar**Credits 1**

Topics in air quality including health effects, toxicology, measurement, characterization, modeling, management, and control.

Note

One hour recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 230.

Typically Offered

Fall

CHE 802 - Selected Topics in Materials Science**Credits 1-18**

Areas of current interest in materials including solidification, transformations, solutions, dislocations, creep, fracture, failure analysis, and failure prevention.

Repeat for Credit

Y

Requisites

Prerequisite: CHE 681.

Typically Offered
Fall, Spring, Summer

CHE 805 - Selected Topics in Biochemical Engineering

Credits 3

Subjects of current interest in the broadest sense of biochemical engineering. These involve not only chemical engineering problems which contain biochemical biological, or medical elements but also applications of chemical engineering principles and methodologies to biochemical, biological, medical, and ecological problems.

Repeat for Credit
Y

Requisites
Prerequisite: CHE 715.

Typically Offered
Spring, Summer

CHE 810 - Research in Chemical Engineering

Credits 1-18

Original investigations in transport phenomena, unit operations, thermodynamics, process dynamics, applied chemical kinetics and process development. The results of these investigations may be used for the master's thesis or the doctoral dissertation.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

CHE 815 - Advanced Chemical Engineering Thermodynamics

Credits 3

Advanced topics in thermodynamics, with emphasis on a chemical and physical equilibria and the estimation of thermodynamic properties.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing in chemical engineering.

Typically Offered
Fall, Spring, Summer

CHE 822 - Advanced Chemical Reaction Engineering

Credits 3

Theory of kinetics and catalysis in homogeneous and heterogeneous systems, with applications in chemical reactor design and process development.

Note
Three hours recitation a week.

Repeat for Credit
Y

Requisites
Prerequisite: CHE 550.

Typically Offered
Fall, Spring, Summer

CHE 831 - Advanced Nanotechnology in Chemical Engineering

Credits 3

This course will cover concepts of nanoscience and nanotechnology: material continuum; fundamental properties of nanomaterials; nanomaterials (nanoparticles, nanocarbons, hybrid nanomaterials, nanocomposites, semiconductor quantum wells, nanowires, and quantum dots); fabrication and characterization methods; selected applications of nanomaterials such as energy storage, thermal management, sensing, electronic devices, composites, energy harvesting (photovoltaics), environmental remediation, medicine, and heterogeneous catalysis.

Repeat for Credit
N

Requisites
Senior undergraduate or graduate standing in engineering, or permission of the

instructor. It will be assumed that the student has been exposed to basic materials science.

Typically Offered

On sufficient demand

CHE 832 - Advanced Molecular Modeling

Credits 3

This course focuses on introducing basic concepts in chemical engineering and chemistry related to thermodynamics, Kinetics, Chemistry, Surface Science, Catalysis, Materials Science in the context of molecular-level modeling. Students will also gain hands-on experience in using common simulation tools and high-performance computing.

Repeat for Credit

N

Requisites

Prerequisites: CHM 585 OR CHM 595, CHE 354, CHE 355, CHE 356, and CHE 521, OR instructor permission.

Typically Offered

On sufficient demand

CHE 833 - Advanced Microbial Biotechnology

Credits 3

Continued advancements in microbiology have enabled the ability to use microorganisms for engineering applications. Thus, microbial biotechnology is a rapidly expanding area that has potential to improve agriculture productivity, provide renewable sources of energy, and improve the health of plants, animals, and humans, among other applications. This course will highlight these research areas and will emphasize chemical engineering concepts found within these systems.

Repeat for Credit

N

Requisites

Corequisites: CHE 320 OR BAE 445 OR instructor permission.

Typically Offered

On sufficient demand

CHE 835 - Chemical Engineering Analysis

Credits 3

The mathematical formulation of problems in chemical engineering using partial differential equations, vector and tensor notation. Solution of these problems by analytical and numerical techniques.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 530.

Typically Offered

Fall, Spring, Summer

CHE 842 - Advanced Biomass Thermochemical Conversion

Credits 3

Thermochemical methods to convert biomass to fuels and chemicals: liquefaction, pyrolysis, gasification, and heterogeneous catalysis. Analysis of the reaction kinetics and mass, heat, and momentum transfer in chemical reactors associated with these methods.

Note

Three hours of recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 520 or ME 513 and CHE 550 or BAE 545.

Typically Offered

Fall-Odd Years

Crosslisted

BAE 842

CHE 862 - Advanced Transport Phenomena I

Credits 3

Advanced treatment of momentum, energy, and mass

transport, with emphasis on momentum transport in chemical engineering applications.

Note

Three hours recitation a week.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHE 867 - Advanced Transport Phenomena II

Credits 3

Advanced treatment of momentum, energy, and mass transport, with emphasis on energy and mass transport in chemical engineering applications.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHE 862.

Typically Offered

Fall, Spring, Summer

CHE 875 - Graduate Seminar in Chemical Engineering

Credits 1

Discussion of current advances and research in chemical engineering and related fields.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CHE 898 - Master's Report

Credits 1-18

Topics selected with approval of department head and major professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHE 899 - Master's Thesis

Credits 1-18

Topics selected with approval of department head and major professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHE 901 - Selected Topics in Reaction Engineering

Credits 3

Advanced study in this field of such topics as complex reactions, catalysis, dispersion effects, fast reactions, reactions in fluidized beds.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHE 822 and one course in chemical engineering numbered 851 or higher.

Typically Offered

Fall, Spring, Summer

CHE 910 - Selected Topics in Transport Phenomena

Credits 3

Subjects of current interest such as surface phenomena, turbulent transport, droplet mechanics, multicomponent systems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHE 867.

Typically Offered

Fall, Spring, Summer

CHE 930 - Selected Topics in Thermodynamics**Credits 3**

Advanced study in this field of such topics as irreversible thermodynamics, solution theory, and surface phenomena.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHE 815 and one course in chemical engineering numbered 851 or higher.

Typically Offered

Fall, Spring, Summer

CHE 999 - Dissertation Research**Credits 1-18**

Topics selected with approval of department head and major professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHINE 101 - Chinese I**Credits 4**

Introduction to the fundamental linguistics and cultural characteristics of the Chinese language and its writing systems.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

CHINE 200 - Chinese II**Credits 4**

Continuation of Chinese I. Development of functional skills for familiar situations.

Repeat for Credit

N

Requisites

Prerequisite: CHINE 101.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

CHINE 201 - Chinese III**Credits 4**

Continuation of Chinese II; further development of four skills of listening, speaking, reading, and writing; intensive practice of spoken and written Chinese.

Repeat for Credit

N

Requisites

Prerequisite: CHINE 200

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

CHINE 301 - Chinese IV

Credits 4

Continuation of Chinese III. Presentation of more advanced elements of the Chinese language, with intensive practice of spoken and written Chinese.

Repeat for Credit

N

Requisites

Prerequisite: CHINE 201

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

CHINE 501 - Chinese V

Credits 3

Development of communication skills through application activities. Enhancement of vocabulary and intensive practice in grammatical structures and their usage.

Repeat for Credit

N

Requisites

Prerequisite: CHINE 301 or equivalent.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

CHINE 502 - Chinese VI

Credits 3

Continuation of Chinese V. Development of functional skills for general situations. Further enhancement of vocabulary and intensive practice in grammatical structures and their usage.

Repeat for Credit

N

Requisites

Prerequisite: CHINE 501 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

CHINE 599 - Special Studies in Chinese

Credits 0-18

Special Studies in Chinese

Note

Consent of department head and instructor.

Repeat for Credit

Y

Typically Offered

Other

CHM 110 - General Chemistry

Credits 3

Principles, laws, and theories of chemistry; important metallic and nonmetallic substances.

Note

Three hours lecture a week. An optional laboratory course, CHM 111, is available for an additional hour credit.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 111 - General Chemistry Laboratory

Credits 1

A laboratory course to supplement the material of CHM 110.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: CHM 110.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 199 - Foundations for Success in Chemistry 1**Credits 3**

Skills and concepts needed for success in the first course of the freshman chemistry sequence.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: (One year of high school chemistry AND MATH 100) OR two years of high school algebra).

Typically Offered

Fall, Spring

CHM 200 - Frontiers in Chemistry**Credits 1**

An undergraduate seminar designed to introduce students to research being carried out within the Kansas State University Chemistry Department and to offer perspectives on other issues of interest to chemistry majors and those considering chemistry as a major.

Repeat for Credit

Y

Typically Offered

Fall or Spring

CHM 210 - Chemistry I**Credits 4**

First course of a two-semester study of the principles of chemistry and the properties of the elements and their compounds.

Note

Concurrent enrollment in CHM 210 lab is required.

Three hours lecture and three hours lab a week.

Students entering the university with Advanced Placement chemistry examination credit may earn the following grades: (Score 5) A in Chemistry I and A in Chemistry II; (Score 4) A in Chemistry I and B in Chemistry II; (Score 3) B in Chemistry I.

Repeat for Credit

N

Requisites

Prerequisite: (One year of high school chemistry AND MATH 100) OR two years of high school algebra).

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 211 - Chemistry I Recitation**Credits 1**

An optional recitation class that requires concurrent enrollment in CHM 210 Chemistry I. The objective is the development of skills for solving chemical problems.

Note

Instruction will be via a small class format. Credit independent of grade for Chemistry I.

Repeat for Credit

Y

Requisites

Corequisite: CHM 210

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 220 - Honors Chemistry I

Credits 5

First course of a two-semester study of chemical principles. Intended for students with a strong background in chemistry.

Note

Four hours lecture and three hours lab a week. Concurrent enrollment in CHM 220 lab is required.

Repeat for Credit

N

Requisites

Prerequisite: (One year of high school chemistry AND MATH 100) OR two years of high school algebra); ACT composite score of 26 or higher.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 230 - Chemistry II

Credits 4

Second course of a two-semester study of the principles of chemistry and the properties of the elements and their compounds.

Note

Three hours lecture and three hours lab a week. Concurrent enrollment in CHM 230 lab is required.

Students entering the university with Advanced Placement chemistry examination credit may earn the following grades: (Score 5) A in Chemistry I and A in Chemistry II; (Score 4) A in Chemistry I and B in Chemistry II; (Score 3) B in Chemistry I.

Repeat for Credit

N

Requisites

Prerequisite: CHM 210 OR CHM 220.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 231 - Chemistry II Recitation

Credits 1

An optional recitation class that requires concurrent enrollment in CHM 230 Chemistry II. The objective is the development of skills for solving chemical problems.

Note

Instruction will be via a small class format. Credit independent of grade for Chemistry II.

Repeat for Credit

N

Requisites

Corequisite: CHM 230.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 250 - Honors Chemistry II

Credits 5

Continuation of CHM 220, covering the principles of chemistry.

Note

Three hours lecture and five hours lab a week.

Intended for students with a strong background in chemistry. Concurrent enrollment in CHM 250 lab is required. Laboratory has emphasis on quantitative chemical analysis.

Repeat for Credit

N

Requisites

Prerequisite: CHM 220.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 315 - Environmental Science: A Chemistry Perspective**Credits 3**

An analysis of important technological developments and their impact on society and on the earth's environment; ethical issues raised by technological advances. History, matter and energy, ecosystems, population issues, air pollution, water pollution, hazardous substances, environmental policies, and decision making are discussed.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230 OR CHM 250.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

CHM 316 - Environmental Science: A Chemistry Perspective Laboratory**Credits 1**

A laboratory course to supplement the material of CHM 315.

Note

Three hours lab per week.

Repeat for Credit

N

Requisites

Corequisite: CHM 315.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 350 - General Organic Chemistry**Credits 3**

A survey of types of organic reactions important to biological science, including pre-veterinary and certain agriculture and health and human sciences programs.

Note

Three hours lecture a week. Concurrent enrollment in CHM 351 is urged.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230 OR CHM 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 351 - General Organic Chemistry Laboratory**Credits 2**

General Organic Chemistry Laboratory

Note

It is strongly recommended students complete CHM 350 prior to taking CHM 351.

Repeat for Credit

N

Requisites

Corequisite: CHM 350.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 357 - Chemical Warfare, 1914-Present**Credits 3**

Interdisciplinary look at chemical warfare. Encourages students to engage with the nature of chemical weapons as a way to help them better understand the implications of their use over the last century. Students are asked to think about the ways in which chemical compounds created for benign purposes can be subverted and used as weapons regardless of their creator's original intent.

Repeat for Credit

N

Typically Offered

Spring-Even Years

Crosslisted

HIST 357

CHM 371 - Chemical Analysis**Credits 4**

Principles of chemical equilibria and quantitative analysis: gravimetric, titrimetric, spectrophotometric, electroanalytical, and separations methods.

Note

Two hours lecture and five hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 372 - Forensic Chemistry and Criminalistics**Credits 3**

Introduction of forensic science and chemistry. Collecting physical evidence at a crime scene and examining it in the laboratory. Soils, glass, hair, fibers, drugs, explosives, poisons, castings, inks, and arson and rape situations are investigated.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 OR CHM 210 OR CHM 220.

Typically Offered

Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 399 - Honors Seminar**Credits 3**

Open to students in the arts and sciences honors program.

Repeat for Credit

N

Typically Offered

Fall

CHM 497 - Research in Undergraduate Chemistry

Credits 1-3

Undergraduate research in the chemical sciences.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

CHM 498 - Honors Project**Credits 3**

Open only to non-Chemistry Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 499 - Problems in Undergraduate Chemistry**Credits 1-18**

Problems may include classroom and/or lab work.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

CHM 500 - General Physical Chemistry**Credits 3**

Elementary principles of physical chemistry.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: (CHM 230 OR CHM 250) AND (MATH 210 OR MATH 220) AND (PHYS 113 OR PHYS 213).

Typically Offered

Spring

CHM 531 - Organic Chemistry I**Credits 3**

Topics to be covered include fundamental concepts in organic chemistry such as hybridization, molecular orbitals, structure and bonding, acids and bases, kinetics and thermodynamics, stereochemistry and chirality, and conformational analysis. The basic knowledge will be used to study the syntheses, reactions, and mechanisms of functional groups such as alkanes, haloalkanes, and alkenes. Structural determination using infrared spectroscopy and nuclear magnetic resonance will also be included.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230 OR CHM 250.

Typically Offered

Fall, Spring

CHM 532 - Organic Chemistry Laboratory**Credits 2**

A laboratory exploring the synthesis and characterization of organic compounds.

Note

It is strongly recommended students complete CHM 531 prior to taking CHM 532.

Repeat for Credit

N

Requisites

Corequisite: CHM 531.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 545 - Chemical Separations**Credits 2**

Principles of modern separation techniques.

Note

One hour lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: (CHM 250 OR CHM 371) AND CHM 532 AND CHM 550.

Typically Offered

Spring

CHM 550 - Organic Chemistry II**Credits 3**

A continuation of Organic Chemistry I (CHM 531). CHM 550 represents the second semester of a two-semester survey of organic chemistry. Topics to be discussed include syntheses, reactions, and mechanisms of alkynes, aldehydes and ketones, carboxylic acids and their derivatives, amines, benzene and its derivatives, organometallic chemistry, conjugated unsaturated systems and pericyclic reactions, polymers, carbohydrates, lipids, amino acids, proteins, and nucleic acids. Structural identification will be studied using various spectroscopic methods.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 531.

Typically Offered

Fall, Spring

CHM 551 - Advanced Organic Laboratory**Credits 2**

Advanced Organic Laboratory

Note

One five-hour lab and one hour of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 550 and CHM 532.

Typically Offered

Fall, Spring

CHM 566 - Instrumental Methods of Analysis**Credits 3**

Introduction to theory and practice of electrochemical methods, molecular and atomic spectroscopy, surface science, mass spectrometry, separation methods, and electronics in analytical chemistry.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: (CHM 250 OR CHM 371) AND CHM 550 AND (CHM 500 OR CHM 595).

Typically Offered

Fall

CHM 585 - Physical Chemistry I

Credits 3

Elementary chemical thermodynamics and kinetic theory of gases.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: (CHM 350 OR CHM 531) AND MATH 222 AND PHYS 214.

Typically Offered

Fall

CHM 595 - Physical Chemistry II**Credits 3**

Elementary quantum chemistry, spectroscopy, statistical thermodynamics, and chemical kinetics.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: (CHM 350 OR CHM 531) AND MATH 222 AND PHYS 214.

Typically Offered

Spring

CHM 596 - Physical Methods Laboratory**Credits 1-2**

Experiments that relate to physical and instrumental methods.

Note

Three to six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 566 AND MATH 221 AND (PHYS 114

OR PHYS 214).

Typically Offered

Spring

CHM 599 - Senior Thesis Research**Credits 1-3**

A final written report and oral presentation are required.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 600 - Scientific Glassblowing**Credits 1**

The basic techniques of bending, sealing, and blowing glass used to fabricate scientific glassware.

Note

Three hours of laboratory including one lecture demonstration a week.

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 596 Physical Methods Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: Junior OR Senior OR Graduate standing in the physical sciences, OR consent of instructor.

Typically Offered

Spring

CHM 601 - Safe Chemical Laboratory Practices**Credits 1**

A general safety course for persons working or teaching in

a chemical laboratory.

Note

One hour of lecture per week.

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 596 Physical Methods Laboratory. Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall

CHM 611 - Inorganic Chemistry I

Credits 3

Atomic and molecular structure, bonding concepts used in the practice of inorganic chemistry. Applications of symmetry and group theory to structure, bonding, and spectra.

Note

May only take either CHM 611 or CHM 811, but not both, for credit.

Repeat for Credit

N

Requisites

Prerequisite: CHM 550.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 612 - Inorganic Chemistry II

Credits 3

Structure, reactivity, and mechanistic aspects of main group and transition metal complexes. Organometallic reactions, catalysis, and bioinorganic chemistry.

Note

May only take either CHM 612 or CHM 812, but not both, for credit.

Repeat for Credit

N

Requisites

Prerequisite: CHM 550.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

CHM 652 - Organic Chemistry III: Reactions and Mechanisms

Credits 3

Advanced study of organic compounds and their associated reaction mechanisms.

Note

Three hours lecture a week.

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 596 Physical Methods Laboratory.

May only take either 652 or 852, but not both, for credit.

Repeat for Credit

N

Requisites

Prerequisite: CHM 532 AND CHM 550.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CHM 657 - Inorganic Techniques

Credits 2

The preparation, characterization, and study of transition metal, main group, and organometallic compounds using techniques commonly encountered in industrial and academic research.

Note

One hour lecture and three hours lab a week.

Repeat for Credit

N

Requisites

COREquisite: CHM 611 OR CHM 612.

Typically Offered

Fall

CHM 700 - Practicum in Teaching Chemistry**Credits 1**

Principles and methods of instruction in laboratories and recitation classes in chemistry, including one semester of supervised experience as an instructor in a chemical laboratory. This is a required course of all teaching assistants in the Department of Chemistry.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 596 Physical Methods Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing in chemistry OR consent of instructor.

Typically Offered

Fall

CHM 777 - Practical NMR Spectroscopy**Credits 1**

Fundamental aspects of 1D and 2D nuclear magnetic resonance (NMR) spectroscopy, as applied to the Chemistry Department's Varian 200- and 400-MHz

spectrometers.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 596 Physical Methods Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: Senior OR graduate standing in the physical sciences, OR consent of instructor.

Typically Offered

Spring

CHM 799 - Problems in Chemistry**Credits 1-18**

Problems may include classroom or laboratory work. Not for thesis research.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 596 Physical Methods Laboratory. Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 800 - Chemistry in Outer Space and in the Laboratory**Credits 2**

The generation of reactive atoms and molecules in outer space and in the laboratory is covered, as well as their chemical reactions and spectroscopy. Extreme conditions of high and low temperatures, synthesis using atoms, nanoscale particles of inorganic materials, and matrix isolation are discussed.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

CHM 801 - Chemical Thermodynamics

Credits 3

The laws, principles, and methods of thermodynamics and their applications to chemical systems. Statistical-molecular approach emphasized.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Other

CHM 811 - Advanced Inorganic Chemistry I

Credits 3

Advanced concepts in atomic and molecular structure, bonding concepts used in the practice of inorganic chemistry. Applications of symmetry and group theory to structure, bonding, and spectra.

Note

May only take either 611 or 811, but not both, for credit.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Fall

CHM 820 - Materials Chemistry

Credits 3

Concepts of materials chemistry developed from an understanding of the chemical composition and structure of materials, and their relationship to the properties of matter. Students will be introduced to the structures and composition of materials and the diverse range of materials, including metals, metal clusters, semiconductors, nanomaterials, supramolecular materials, sol-gel materials, liquid crystals, glasses, polymers and composites.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory. Consent of instructor.

Repeat for Credit

N

Typically Offered

Spring

CHM 852 - Advanced Organic Chemistry

Credits 3

Advanced study of organic compounds and fundamental types of reactions.

Note

Three hours lecture a week. May only take either 652 or 852, but not both, for credit.

Repeat for Credit

N

Typically Offered

Fall

CHM 854 - Theoretical Chemistry I

Credits 3

Introduction to quantum mechanics and atomic and molecular spectroscopy.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Fall

CHM 856 - Chemical Kinetics**Credits 3**

Survey of experimental and theoretical aspects of dynamics of chemical reactions.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: CHM 801 OR CHM 854.

Typically Offered

Other

CHM 860 - Synthetic Organic Chemistry**Credits 4**

Conditions, scope, and applications of reactions useful in synthetic organic chemistry.

Note

Four hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring

CHM 862 - Organic Spectroscopy**Credits 3**

The principles of IR, UV-VIS, mass, and NMR spectroscopies applied to the problem of structure determination.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Fall

CHM 899 - Research in Chemistry**Credits 1-18**

Research in analytical chemistry, inorganic chemistry, organic chemistry, and physical chemistry for the M.S. Degree.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 901 - Graduate Seminar in Analytical Chemistry

Credits 0-1

Graduate Seminar in Analytical Chemistry

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 902 - Graduate Seminar in Inorganic Chemistry**Credits 0-1**

Graduate Seminar in Inorganic Chemistry

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 903 - Graduate Seminar in Organic Chemistry**Credits 0-1**

Graduate Seminar in Organic Chemistry

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 904 - Graduate Seminar in Physical Chemistry**Credits 0-1**

Presentation of topics from literature in physical chemistry.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CHM 920 - Analytical Separations**Credits 3**

The theory, instrumentation, and application of classical and modern separation techniques are covered in this lecture course.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring

CHM 929 - Physical Methods in Inorganic Chemistry**Credits 3**

Theory and application of infrared, Raman, visible, ultraviolet, NMR, ESR, NQR, Mossbauer, and mass

spectrometry to inorganic chemistry.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring

CHM 930 - Homogeneous Catalysis

Credits 2

The study of industrially important and synthetically useful catalysis of organic reactions by soluble metal complexes.

Note

Two hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring-Even Years

CHM 935 - Selected Topics in Inorganic Chemistry

Credits 1-3

A lecture course in inorganic chemistry in areas of specialization of the faculty, with emphasis on current developments. Specific topics will be changed from semester to semester, so a student may take the course for credit more than once.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II;

and CHM 598 Physical Chemistry II Laboratory. Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CHM 937 - Applications of Surface Science to Chemistry

Credits 3

Chemical bonding in the solid state. Surface science and related techniques as applied to chemical problems. Special topics including data analysis and corrosion studies.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

CHM 939 - Topics in Analytical Chemistry

Credits 1-3

A lecture course in analytical chemistry in areas of specialization of the faculty, with emphasis on current developments.

Repeat for Credit

Y

Typically Offered

On sufficient demand

CHM 940 - Chemical Microscopy

Credits 3

The theory, instrumentation and applications of modern microscopic methods are covered in this lecture course. Emphasis is given to the study of chemically-important phenomena in material systems.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring-Even Years

CHM 944 - Electroanalytical Chemistry**Credits 2-3**

Theory and applications of electrochemical methods: chronoamperometry, chronopotentiometry, cyclic voltammetry, coulometry, polarography, potentiometry, and instrumentation.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

CHM 947 - Applied Molecular Spectroscopy**Credits 3**

Experimental, and theoretical methods associated with ultraviolet and visible absorption, fluorescence, Raman scattering, and nonlinear optical spectroscopies.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: CHM 854.

Typically Offered

Spring-Odd Years

CHM 950 - Chemical Statistical Mechanics**Credits 3**

Application of classical and quantum statistical mechanics to chemical phenomena.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: CHM 801 AND CHM 854.

Typically Offered

Other

CHM 954 - Theoretical Chemistry II**Credits 3**

Quantum theory of atomic and molecular structure.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Requisites

Prerequisite: CHM 854.

Typically Offered

Spring

CHM 955 - Selected Topics in Physical Chemistry

Credits 1-3

A lecture course in physical chemistry in areas of specialization of the faculty, with emphasis on current developments. Specific topics will be changed from semester to semester, so a student may take the course for credit more than once.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Requisites

Prerequisite: CHM 854.

Typically Offered

On sufficient demand

CHM 965 - Physical Organic Chemistry

Credits 3

Principles of orbital symmetry, thermochemistry, kinetics, and other topics applied to the understanding of reaction mechanisms.

Note

Three hours lecture a week. Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

N

Typically Offered

Spring

CHM 970 - Selected Topics in Organic Chemistry

Credits 1-3

A lecture course in organic chemistry in areas of specialization of the faculty, with emphasis on current developments. Specific topics will be changed from semester to semester, so a student may take the course for credit more than once.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

On sufficient demand

CHM 999 - Research in Chemistry

Credits 1-18

Research in analytical chemistry, inorganic chemistry, organic chemistry, and physical chemistry for the Ph.D. Degree.

Note

Unless otherwise stated, all chemistry courses numbers 600 or above require the following as minimum prerequisites: CHM 550 Organic Chemistry II; CHM 532 Organic Chemistry Laboratory; CHM 595 Physical Chemistry II; and CHM 598 Physical Chemistry II Laboratory.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CIS 015 - Undergraduate Seminar

Credits 0

Presentation of professional problems and practices by students, faculty, and industry professionals associated with computing and information sciences.

Note

One hour lecture per week. Required of all undergraduate students new to the department.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CIS 090 - CIS Scholars Seminar**Credits 0**

Presentation of professional problems and practices by students, faculty, and professionals associated with computing science.

Repeat for Credit

Y

Requisites

Prerequisite: Admission into the CIS Scholars Program.

Typically Offered

Fall, Spring

CIS 115 - Introduction to Computing Science**Credits 2**

A survey of the discipline of Computing Science and its interaction with other disciplines, incorporating historical development, theories, and tools of Computing Science (algorithm design and programming). Topics include: mechanical and digital computers, computational thinking, security, simulation, data science, web technologies, and more. Students will be able to explore real-world problems within computer science and research current topics.

Note

2 hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite or Concurrent: CIS 116

Typically Offered

Fall, Spring

CIS 116 - Introduction to Programming**Credits 1**

An introduction to programming by exploring core concepts such as variables, conditionals, iteration, basic data structures, functions, and classes. Hands-on activities to learn and apply concepts to real-world problems and ideas. Students will gain a solid foundation in programming, setting the stage for further study and professional use.

Note

2 hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100

Typically Offered

Fall, Spring

CIS 118 - International Professional Development Experience**Credits 1**

Participation in various professional development activities at an international university.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the Computer Science Professional Program.

Typically Offered

Spring

CIS 190 - Undergraduate Seminar in Computing and Information Sciences**Credits 1-3**

Topics of special interest in computing and information sciences.

Repeat for Credit

Y

Typically Offered

Fall

CIS 200 - Programming Fundamentals

Credits 4

Principles of algorithm design and their application to procedural programming: state, control structures, methods. Patterns of conditional and iterative control structure. Program testing. Introduction to arrays, classes, and objects. Programming projects.

Repeat for Credit

N

Requisites

Prerequisite: CIS 116.

Prerequisite or concurrent enrollment: MATH 205 or MATH 220.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

CIS 209 - Computer Programming for Engineers

Credits 3

Application of computers to engineering problems. Abstraction and problem solving; algorithms; control structures; input/output; functions; arrays and array processing.

Note

Two hours lecture, two hours lab each week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring, Summer

CIS 300 - Data and Program Structures

Credits 3

A study of common data and program structures together with associated algorithms. Topics include interfaces, design patterns, arrays, stacks, queues, lists, trees, hash tables, recursion, binary search, and tree traversals. Experience with both use and implementation of these structures and algorithms using a modern programming language. Discussion of tradeoffs involving performance and software maintainability.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 200 and either MATH 205 or MATH 220.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 301 - Logical Foundations of Programming

Credits 3

Logical formalisms used to model and reason about computer systems. Propositional and predicate logic, syntax, semantics, and proof theory; soundness and completeness issues. Mathematical induction. Program verification: invariants and program logics.

Repeat for Credit

N

Requisites

Prerequisite: CIS 200. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 308 - C Language Laboratory

Credits 1

Fundamentals of programming in C.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 351 - Cyber Defense Basics

Credits 1

Knowledge and skills needed to administer and defend computer networks and systems. Topics include the basics of computer networks, intelligence gathering, network scanning and sniffing, password security and cracking, vulnerability exploitation, distributed denial of service, logging and auditing, and wireless network security and cracking. Practice using an isolated computing network.

Note

One and a half hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

CIS 397 - Honors Seminar in Computer Science

Credits 1-3

Honors Seminar in Computer Science

Repeat for Credit

N

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

CIS 400 - Object-Oriented Design, Implementation, and Testing

Credits 3

A study of concepts and techniques used to produce quality software programs. Object-oriented concepts, models, execution environments, design and testing techniques. Extensive application of these concepts and techniques to the development of non-trivial software programs.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 415 - Ethics and Conduct for Computing Professionals

Credits 3

A study of the ethical issues raised by computing technologies and the impact on society. Exploration of how one might justify actions in regard to ethical dilemmas within the fields of technology, computer science, information security, and artificial intelligence. Other topics include an examination of terminology used, Profession Codes of Conduct for computer science professionals, ethics of software development, and ethical issues relating to privacy and intellectual property in cyberspace.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

CIS 450 - Computer Architecture and Operations**Credits 3**

Introduction to modern computer architectures: register transfer abstraction, addressing modes, basic operations (data transfer, arithmetic/logic, and control operations). Basic Operating System concepts and operations. Understanding relationships of higher-level language constructs to corresponding assembly instruction sequences generated by compilers. Introduction to interrupts and low-level I/O operations.

Repeat for Credit

N

Requisites

Prerequisite: ECE 241 and CIS 308. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 490 - Special Topics in Computer Science**Credits 2-4**

Current topics in computer science.

Repeat for Credit

Y

Requisites

Prerequisite: Varies with the announced topic.

Typically Offered

Other

CIS 497 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CIS 499 - Honors Research/Thesis**Credits 2-4**

Individual research problem selected with approval of faculty advisor. A report/thesis is presented orally and in writing during the last semester.

Note

Open to students in the College of Engineering honors program and to seniors in the College of Arts and Sciences honors program.

Repeat for Credit

Y

Typically Offered

Other

CIS 501 - Software Architecture and Design**Credits 3**

Principles and patterns for design and structure of software, development of object-oriented models, examples of software architecture.

Repeat for Credit

N

Requisites

Prerequisite: CIS 400. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 505 - Introduction to Programming Languages**Credits 3**

History, programming language concepts including type, scope and extent, abstraction mechanisms and control; programming paradigms, including one or more of logic, functional, and object-oriented programming, and programming languages supporting the selected paradigms;

interpreters, compilers and virtual machines for the selected languages; storage management and garbage collection; type checking and type inference.

Note

Not available for credit to students with credit in CIS 705.

Repeat for Credit

N

Requisites

Prerequisite: CIS 301, CIS 400. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 520 - Operating Systems I

Credits 3

Operating systems concepts, services, and implementation: interrupt processing, processes, concurrency, deadlocks, resource scheduling and system structure; resource management: real and virtual storage, input/output systems, disk scheduling and file systems; design and construction of concurrent programs.

Repeat for Credit

N

Requisites

Prerequisite: CIS 450 or ECE 431; CIS 308, and CIS 400 or CIS 501. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 522 - Introduction to Data Structures

Credits 1

Introduction to basic data structures such as stacks, queues, lists, and priority queues, and algorithmic techniques for sorting, searching and hashing. Emphasis on modularity and reuse. Introduction to the concept of object-oriented design and interface specifications.

Note

Three hours recitation a week. Course meets in one

contiguous block of five weeks. C, or C++ programming.

Repeat for Credit

N

Typically Offered

Spring

CIS 523 - Introduction to Concurrent Programming

Credits 1

Introduction to concurrent programming techniques based on message passing primitives (send/receive) and shared memory (semaphore based P/V operations and Monitor based wait/signal operations).

Note

Three hours recitation a week. Course meets in one contiguous block of five weeks.

Repeat for Credit

N

Requisites

Prerequisite: C, or C++ programming and CIS 300 or CIS 522. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 525 - Introduction to Network Programming

Credits 3

Basic inter-process communication and network programming concepts including client-server and peer-to-peer, communication protocol use and specification, reliable and secure communication, and network applications including web technologies, electronic mail, and file transfer with a focus on application and implementation.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300 and CIS 308. Students may enroll in CIS courses only if they have earned a grade of C or better

for each prerequisite to those courses.

Typically Offered

Fall

CIS 526 - Web Application Development

Credits 3

Fundamental principles and best practices of web development, user interface design, web API design, advanced web interfaces, web development frameworks, single-page web applications, web standards and accessibility issues.

Note

Not available for credit to students with credit in CC 515.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501 and either CC 120, CMST 135, or equivalent experience in HTML, CSS, and JavaScript. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses. Prerequisite or concurrent: CIS 560.

Typically Offered

Spring

CIS 527 - Enterprise Systems Administration

Credits 3

Administration of the Linux operating system, including installation, configuration, distributed file systems, firewalls and security, shell scripting, and user account management.

Note

Three hours recitation a week. Not available for credit to students with credit in CC 510.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 530 - Introduction to Artificial Intelligence

Credits 3

Fundamental background in intelligent systems for undergraduate students. Intelligent agents, problem-solving, uninformed and informed (heuristic) search, game tree search, foundations of knowledge representation and reasoning using logic and probability, and a first introduction to planning and machine learning. AI topics include the problem areas of natural language processing (NLP) and perception and methodologies such as artificial neural networks and genetic and evolutionary computation. Applications to practical design and development of intelligent systems will be emphasized, leading to individual projects on current topics and applications in AI.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300, CIS 301 and MATH 312 or MATH 510. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 531 - Introduction to Programming Techniques for Data Science and Analytics

Credits 3

Introduction to programming techniques for working with big data. Survey of programming concepts that underlie the MapReduce architecture, their implementation, and specific tools for data integration and data transformation. Basic databases and query processing in the context of real-world problems.

Repeat for Credit

N

Requisites

Prerequisite: Either CIS 200, CIS 209, or CC 210; and

either STAT 225 or STAT 510. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 532 - Introduction to Deep Learning

Credits 3

Foundations of deep learning, with focus on different types of modern neural network architectures (such as convolutional neural networks, recurrent neural networks, and transformers). Regularization and optimization in the context of deep learning. Frameworks and tools for building and training deep neural networks.

Note

Not available for credit to students with credit in CIS 831.

Repeat for Credit

N

Requisites

Prerequisite: CIS 530 or CIS 533

Typically Offered

Fall

CIS 533 - Introduction to Data Science Foundations

Credits 3

Introduction to the foundations of data science and data analytics. Computer science concepts used for making discoveries in data. Data wrangling, feature engineering, classification, regression, clustering, outlier detection, societal aspects of data science, and more. Analysis of real-world data.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300 or CC 310.

Typically Offered

Fall

CIS 536 - Introduction to Computer Graphics

Credits 3

Introduction to computer graphics for undergraduate students. Mathematical foundations (e.g., linear, affine, and projective transformations) and fundamental topics in realistic rendering: view normalization, clipping and culling, scan conversion of lines and polygons, shading and illumination, texture mapping, user interfaces, picking, and collision handling. Intermediate topics include shaders, procedural textures, particle systems, basics of animation, fractals, color theory, and ray tracing.

Note

Not available for credit to students with credit in CIS 636. Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 308 and either MATH 205 or MATH 220. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 537 - Computer Vision

Credits 3

Theory and applications of computer vision. Introduction to computer vision, introduction to image formation, binary image processing, image enhancement and filtering, computational photography, geometric transforms, image features, image recognition, video analysis, deep learning-based computer vision, convolutional neural networks, and other selective topics on computer vision.

Note

Not available for credit to students with credit in CIS 737.

Repeat for Credit

N

Requisites

Prerequisite: CIS 301, CIS 400, and either CC 210 or an equivalent working knowledge of Python programming.

Typically Offered

Spring

CIS 544 - Advanced Software Design and Development

Credits 3

Advanced concepts and practicum in object-oriented analysis, modeling, design, implementation, testing, and use of CASE tools; relationships among structural, static, and dynamic models; relationship among conceptual, system, and implementation models.

Note

Not available for credit to students with credit in CIS 744.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring, Summer

CIS 551 - Fundamentals of Computer and Information Security

Credits 3

An introduction to computer and information security, including common attack techniques, application of cryptography in security, authentication and authorization, network security, enterprise network defense, web security, and analysis of design flaws that render a system vulnerable. Course projects provide hands-on experience on both the defense and offense aspects in cyberspace.

Note

Three hours recitation a week. Not available for credit to students with credit in CIS 751.

Repeat for Credit

N

Requisites

Prerequisite: CIS 450 or CIS 520. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 553 - Fundamentals of Cryptography

Credits 3

Introduction to the fundamentals of cryptography, including mathematical background, classical ciphers, public key encryption, block and stream ciphers, cryptographic hash functions, digital signatures, common attacks, and basic security protocols.

Note

Two hours lecture and two hours lab a week.

Not available for credit to students with credit in CIS 753.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300, MATH 510. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 560 - Database System Concepts

Credits 3

Concepts, approaches, and techniques in database management. Representation of information as data, data storage techniques, foundations of logical data models, data retrieval, database design, transaction management, integrity and security.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300 and CIS 301. Prerequisite or concurrent: MATH 312 or MATH 510. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 561 - Introduction to Data Science in Practice

Credits 3

The development and implementation of computer science solutions to practical data science problems in science and industry. Implementing computer programs and applying computational tools to turn real-world data into knowledge and solve real-world data science problems. Includes a substantial capstone component.

Note

Not available for credit to students with credit in CIS 861.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300 or CC 310.

Typically Offered

Spring

CIS 570 - Introduction to Formal Language Theory**Credits 3**

Formal languages, automata, regular expressions, grammars, introduction to computability theory. Reading and writing informal mathematical proofs pertaining to these topics.

Note

Not available for credit to students with credit in CIS 770.

Repeat for Credit

N

Requisites

Prerequisite: MATH 510. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 575 - Introduction to Algorithm Analysis**Credits 3**

An introduction to mathematical analysis of time- and space-complexity of algorithms, including worst-case, average-case, and amortized complexity. An examination of various algorithmic designs, such as greedy algorithms,

divide-and-conquer algorithms, and dynamic programming algorithms. Techniques for proving correctness of algorithms.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300, CIS 301, and MATH 510.

Typically Offered

Spring

CIS 580 - Fundamentals of Game Programming**Credits 3**

Fundamental principles of programming games. Foundational game algorithms and data structures. Two-dimensional graphics and game world simulation. Development for multiple platforms. Utilization of game programming libraries. Design of multiple games incorporating topics covered.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501 and MATH 221.

Typically Offered

Spring

CIS 585 - Game Engine Design**Credits 3**

Current practices of game engine development. The game engine as a soft real-time multi-agent simulation. Three-dimensional graphics and animation techniques, scene management, physics simulation, event systems, resource management, and network game architectures. Design and prototyping of a general-use game engine.

Repeat for Credit

N

Requisites

Prerequisite: CIS 580 and MATH 551.

Typically Offered

Spring

CIS 590 - Special Topics in Computer Science**Credits 1-4**

Selected topics in Computer Science.

Note

Permission of instructor.

Repeat for Credit

Y

Typically Offered

On sufficient demand

CIS 596 - Entrepreneurial Computer Science Project**Credits 3**

Directed studies: selection, investigation, and report on some topic not covered in prior courses; may include an implementation and/or experimentation component; may be done in collaboration with other students. Completion of a final report with a literature review and project evaluation.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 560, ENTRP 340 and senior standing in computer science. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 598 - Computer Science Project**Credits 3**

Directed studies: selection, investigation and report on some topic not covered in prior courses; may include an implementation and/or experimentation component; may be done in collaboration with other students. Completion of a plan, two reviews, and a final report with literature review

and project evaluation.

Repeat for Credit

N

Requisites

Prerequisite: CIS 560 and senior standing in computer science. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 599 - Cybersecurity Project**Credits 3**

Directed studies: selection, investigation and report on some topic not covered in prior security courses; may include an implementation and/or experimentation component; may be done in collaboration with other students. Completion of a final report with literature review and project evaluation.

Repeat for Credit

N

Requisites

Prerequisite: CIS 551 and senior standing in computer science. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 604 - Set Theory and Logic for CS**Credits 3**

Informal and axiomatic set theory, propositional and predicate logic, proof techniques.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Other

CIS 621 - Real-Time Programming Fundamentals

Credits 1

Relationship between C/C++ constructs and corresponding assembly code generated by compilers. Introduction to special techniques used to implement microcontrollers, such as initialization of programmable CPU modules/peripheral devices, techniques to link assembly and C/C++ codes, producing ROM-able code, and EPROM burning/Flash programming.

Note

Three hours recitation a week. Course meets in one contiguous block of five weeks.

Repeat for Credit

N

Requisites

Prerequisite: C or C ++ programming, and CIS 523 and either CIS 300 or CIS 522. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 622 - Real-Time Operating Systems

Credits 1

Basic real-time operating systems concepts and services; interrupt processing; process and thread models; real-time software architectures and development environments. Detailed study of design and implementation of real-time applications using real-time operating systems.

Note

Three hours recitation a week. Course meets in one contiguous block of five weeks.

Repeat for Credit

N

Requisites

Prerequisite: CIS 621. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 625 - Concurrent Software Systems

Credits 3

Architecture, design, modeling, implementation, and verification of concurrent, parallel, and distributed software; aspects such as real-time programming, parallel simulation; fault-tolerant programming; grid computing, embedded systems control.

Repeat for Credit

N

Requisites

Prerequisite: Either CIS 450 or ECE 431; and either CIS 400 or CIS 501.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 635 - Introduction to Computer-Based Knowledge Systems

Credits 3

Introduction to the applications of artificial intelligence concepts to solving knowledge-dependent tasks. Review of knowledge-representation ideas. Survey of expert system design. Introduction to existing knowledge-based tools available on personal computers. Development of an intelligent system.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 636 - Introduction to Computer Graphics

Credits 3

Devices and software for graphics display and user interaction, development of software for direct graphic manipulation applications.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall, Spring

CIS 640 - Software Testing Techniques**Credits 3**

Survey of software testing methodologies; evaluation of software testing strategies; experience in a variety of software testing practices.

Repeat for Credit

N

Requisites

Prerequisite: CIS 301 and CIS 501. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 641 - Software Engineering Design Project**Credits 3**

Current practices of software development, requirements, design, prototyping, measures and evaluations. Specification, design, and prototyping of a software system.

Note

Not available for credit to students with credit in CIS 642.

Repeat for Credit

N

Requisites

Prerequisite: CIS 308 and CIS 501.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 642 - Software Engineering Project I**Credits 3**

The first semester of a two-semester capstone course. Current practices of software development, requirements, design, prototyping, measures and evaluation. Specification, design, and prototyping of a software system.

Note

Not available for credit to students with credit in CIS 641.

Repeat for Credit

N

Requisites

Prerequisite: CIS 308 and CIS 501.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 643 - Software Engineering Project II**Credits 3**

Continuation of CIS 642. Final implementation, integration, and testing of a software system. Introduction to configuration management, project management, and software maintenance.

Repeat for Credit

N

Requisites

Prerequisite: CIS 642 (which must be taken in the preceding semester).

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 645 - Software Development Environments**Credits 3**

Survey of current development environments and/or an in-depth study of one development environment.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

On sufficient demand

CIS 655 - Security and Reliability of Computing Systems**Credits 3**

Fundamentals of security and reliability of computing systems from both hardware and software perspectives. Topics include symmetric and asymmetric cryptography, artificial intelligence (AI) safety and security, selected topics from hardware-based security, introduction to reliability and fault tolerance, hardware fault tolerance, and software fault tolerance.

Repeat for Credit

N

Requisites

Prerequisites: CIS 450 (Computer Architecture and Operations) OR ECE 441 (Design of Digital Systems); recommended MATH 221 (Analytic Geometry and Calculus II); recommended prior or concurrent CIS 553/753 (Introduction to Cryptography). Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 690 - Implementation Project**Credits 3**

The department will suggest various design or implementation projects for individuals or groups in areas such as translators, interpreters, microprogramming, minicomputer operating systems, graphics, numerical software, etc.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

CIS 705 - Programming Languages**Credits 3**

Programming language concepts, including typing, scoping, abstraction and exceptions; programming paradigms, including one or more of logic, functional, object-oriented and concurrent programming, and programming languages supporting the selected paradigms; introduction to programming language semantics; programming language design; development environments.

Note

Not available for credit to students with credit in CIS 505.

Repeat for Credit

N

Requisites

Prerequisite: CIS 301 and CIS 400. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 706 - Translator Design I**Credits 3**

Compilers and interpreters, including description of languages, finite state scanners. LL(1) parsing, symbol tables, syntax-directed semantics, simple code generation. Constructing a simple compiler.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501, and CIS 505. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 720 - Advanced Operating Systems

Credits 3

Process synchronization and communication, distributed programming primitives, transactions and concurrency control, distributed scheduling, distributed storage, deadlock, security.

Repeat for Credit

N

Requisites

Prerequisite: CIS 520. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Other

CIS 721 - Real-Time Systems**Credits 3**

The design of hard real-time embedded systems, including language and operating system support, scheduling, schedulability analysis, fault tolerance, and design tools.

Repeat for Credit

N

Requisites

Prerequisite: CIS 520 or both CIS 622 and ECE 633. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Other

CIS 722 - Operating System Practices**Credits 3**

Structure and functions of modern operating systems. Emphasis on reading and modifying the source code of a working operating system. This includes memory management, input/output, process management, file systems, and network interconnection software construction.

Repeat for Credit

N

Requisites

Prerequisite: CIS 520. Students may enroll in CIS courses

only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 725 - Advanced Computer Networks**Credits 3**

Network algorithms: routing and congestion control; protocol engineering: protocol decomposition, specification and verification, synthesis; protocols for high speed networks, parallel implementations, light-weight protocols.

Repeat for Credit

N

Requisites

Prerequisite: CIS 520, and CIS 525. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Other

CIS 726 - Advanced World Wide Web Technologies**Credits 3**

An advanced course on the technologies that make up the World Wide Web. WWW site designs and analysis, WWW software architecture, server-side technologies, dynamic executable scheduling, digital libraries, WWW security.

Repeat for Credit

N

Requisites

Prerequisite: CIS 520, CIS 525. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 730 - Principles of Artificial Intelligence**Credits 3**

Introduction to the fundamental concepts and techniques of AI: problem solving, search and planning, knowledge

representation and qualitative reasoning, expert systems, natural language processing and cognitive modeling, computer vision, and machine learning.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 731 - Programming Techniques for Data Science and Analytics

Credits 3

Intermediate programming techniques for data science. Survey of programming concepts that underlie MapReduce, Apache Hadoop, and Spark, along with related tools. NoSQL, search tools, graph databases, and visualization presented in the context of real-world problems involving data integration and transformation.

Repeat for Credit

N

Requisites

Prerequisite: Either CIS 200 or CIS 209, and either STAT 225 or STAT 510.

Typically Offered

Fall

CIS 732 - Machine Learning and Pattern Recognition

Credits 3

Theory and methodology of inductive learning, including decision trees, artificial neural networks, probabilistic and instance-based learning, and inductive logic programming; unsupervised and reinforcement learning, bagging and boosting; genetic algorithms and genetic programming; and applications to data mining.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501

Typically Offered

Fall

CIS 733 - Data Science Foundations

Credits 3

Methods used for making discoveries in complex data and turning data into knowledge. Handling big data and "small data," feature engineering, convolutions, classification, regression, using clustering for discovery, novelty detection, statistical inference, research design, prescriptive analytics, and more. Using standard software packages and libraries for preparing and analyzing data, implementing supervised machine learning, and visualization.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300 or CC 310. Prerequisite or concurrent: STAT 225, STAT 240, STAT 250, STAT 510, or STAT 703.

Typically Offered

Fall

CIS 734 - Introduction to Genomics and Bioinformatics

Credits 4

A problem solving approach to understanding genomics and bioinformatics. Practical use of databases and web-based tools used to study biological problems. Introduction to the algorithms behind these tools.

Note

Three hours lecture and one-and-a-half hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Either BIOL 450 or CIS 300, and instructor permission. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring-Even Years

Crosslisted
BIOL 734

CIS 736 - Computer Graphics

Credits 3

Topics in computer representation and display of images and graphic interaction.

Repeat for Credit
N

Requisites
Prerequisite: CIS 308. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Other

CIS 737 - Advanced Computer Vision

Credits 3

Theory and applications of computer vision. Introduction to computer vision, introduction to image formation, binary image processing, image enhancement and filtering, computational photography, geometric transforms, image features, image recognition, video analysis, deep learning-based computer vision, convolutional neural networks, and other selective topics on computer vision.

Note
Not available for credit to students with credit in CIS 537.

Repeat for Credit
N

Requisites
Prerequisite: CIS 301, CIS 400, and either CC 210 or an equivalent working knowledge of Python programming

Typically Offered
Spring

CIS 740 - Software Engineering

Credits 3

Software life cycle, requirements, specifications, design, validation, measures, and maintenance.

Repeat for Credit
N

Requisites
Prerequisite: CIS 641 or CIS 642. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Other

CIS 744 - Advanced Software Analysis and Design

Credits 3

Advanced concepts and practicum in object-oriented analysis, modeling, design, implementation, testing, and use of CASE tools; relationships among structural, static, and dynamic models; relationship among conceptual, system, and implementation models.

Note
Not available for credit to students with credit in CIS 544.

Repeat for Credit
N

Requisites
Prerequisite: CIS 641 or CIS 642.

Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered
Spring, Summer

CIS 746 - Software Measurement

Credits 3

Measurement theory; development, validation and use of software measures; software measures in the lifecycle, including cost estimation, design measures, software complexity and software reliability.

Repeat for Credit
N

Requisites
Prerequisite: CIS 641 or CIS 642. Students may enroll in CIS courses only if they have earned a grade of C or better

for each prerequisite to those courses.

Typically Offered

Other

CIS 748 - Advanced Software Management

Credits 3

Topics related to the management of software, including organization, project planning, process models, life cycle models, TQM, software quality assurance, cost estimation, configuration management.

Repeat for Credit

N

Requisites

Prerequisite: CIS 740 or CIS 744. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring, Summer

CIS 750 - Advanced Computer Architecture

Credits 3

Fundamentals of quantitative design of computer architectures, memory hierarchy design, instruction-level parallelism, data-level parallelism, thread-level parallelism, parallel programming, parallel performance analysis, and warehouse-scale computers.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 450. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

On sufficient demand

CIS 751 - Computer and Information Security

Credits 3

A comprehensive coverage of computer and information security. Basic cryptography, access control, authentication, authorization, network security, software security, and social aspects of security. The lectures discuss when and where things can go wrong and how design flaws in a system can be exploited to compromise security. Common attack techniques are introduced, and students have the opportunity to work on course projects that cover both the defense and offense aspects in cyber space.

Note

Not available for credit to students with credit in CIS 551.

Repeat for Credit

N

Requisites

Prerequisite: CIS 450 or CIS 520. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 753 - Applied Cryptography

Credits 3

Fundamentals of cryptography, including mathematical background, classical ciphers, public key encryption, block and stream ciphers, cryptographic hash functions, digital signatures, common attacks, and basic network security.

Note

Not available for credit to students with credit in CIS 553. Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300, MATH 510, or equivalent. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 755 - Systems Security

Credits 3

In-depth coverage of advanced theoretical and practical

security techniques with emphasis on construction of new systems and auditing and repair of existing security-critical systems using rigorous design, risk analysis, and engineering methods and application of state-of-the-art theoretical tools.

Repeat for Credit

N

Requisites

Prerequisites: CIS 551 or CIS 751. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 761 - Data Base Management Systems

Credits 3

Data models and languages, hierarchical, network, relational systems; implementational and operational requirements; programming projects using data base management systems.

Repeat for Credit

N

Requisites

Prerequisite: CIS 560, CIS 604. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Other

CIS 762 - Office Automation

Credits 3

Characteristics of information work; modeling systems for characterizing aspects of office environment; form-based systems; office automation and description languages, ergonomics, local area networks and tools used in the automation of offices.

Repeat for Credit

N

Requisites

Prerequisite: CIS 525, CIS 560. Students may enroll in CIS courses only if they have earned a grade of C or better for

each prerequisite to those courses.

Typically Offered

Other

CIS 764 - Database Design

Credits 3

Conceptual, logical, physical, and user interface design for database management systems.

Repeat for Credit

N

Requisites

Prerequisite: CIS 501. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

On sufficient demand

CIS 770 - Formal Language Theory

Credits 3

Regular languages, finite automata, context-free languages, pushdown automata, context-sensitive languages, linear bounded automata, recursively enumerable languages, Turing machines.

Note

Not available for credit to students with credit in CIS 570.

Repeat for Credit

N

Requisites

Prerequisite: MATH 510. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Spring

CIS 771 - Software Specification

Credits 3

Formal logic or specification of software components; algebraic vs. model-based specifications; common abstract types; verification of properties of specifications;

introduction to specification of concurrent systems.

Repeat for Credit

N

Requisites

Prerequisite: CIS 301. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Other

CIS 775 - Analysis of Algorithms

Credits 3

Study and application of techniques and procedures used in the analysis of algorithms including the worst and average cases of both time and space. Study of the P and NP classes.

Repeat for Credit

N

Requisites

Prerequisite: CIS 575. Students may enroll in CIS courses only if they have earned a grade of C or better for each prerequisite to those courses.

Typically Offered

Fall

CIS 798 - Topics in Computer Science

Credits 1-18

Topics in Computer Science.

Repeat for Credit

Y

Requisites

Prerequisite: Prerequisite varies with the announced topic.

Typically Offered

Other

CIS 801 - Translator Design II

Credits 3

LR parsing, storage allocation, code generation, data flow

optimization, compiler generators.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 706.

Typically Offered

On sufficient demand

CIS 806 - Semantics of Programming Languages

Credits 3

Introduction of formal semantics description methods for programming languages; comparison of operational, denotational, algebraic, and axiomatic methods; analysis of relationship of formal semantics definitions to computer implementation.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 771.

Typically Offered

Other

CIS 810 - Logic Programming

Credits 3

Selected topics; constraint logic programming, deductive databases, concurrent logic programming, object-oriented logic programming, mathematical theory of logic programming specification and transformation of logic programs.

Note

Knowledge of Prolog.

Repeat for Credit

Y

Typically Offered

Other

CIS 820 - Topics in Theory of Asynchronous Systems

Credits 3

Safety and liveness properties, synchronous and asynchronous message passing systems, virtual circuit and datagram communication, process failure, concepts of composition and superimposition, temporal logic, reachability analysis, theory of concurrency control, atomic commitment, replica control.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 720.

Typically Offered

Other

CIS 825 - Topics in Distributed Systems**Credits 3**

Models of distributed computation, events and global states, failure semantics, communication abstractions, synchronization in distributed programs; distributed algorithms: election, termination and deadlock detection, broadcast programming and algorithms.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 720; or CIS 725 and permission of the instructor.

Typically Offered

Other

CIS 826 - Protocol Engineering**Credits 3**

Basic concepts of protocol design, specification languages and formal description techniques, safety and liveness properties, protocol validation, protocol synthesis, protocol translation and conformance testing.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 725.

Typically Offered

Other

CIS 830 - Current Topics in Artificial Intelligence**Credits 3**

Advanced techniques and new ideas in artificial intelligence. Includes applications and case studies of artificial intelligence in action.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 730.

Typically Offered

Other

CIS 831 - Deep Learning**Credits 3**

Foundations of deep learning, with focus on different types of modern neural network architectures (such as convolutional neural networks, recurrent neural networks, and transformers). Regularization and optimization in the context of deep learning. Frameworks and tools for building and training deep neural networks.

Repeat for Credit

N

Requisites

Prerequisite: CIS 732 or IMSE 730

Typically Offered

Fall

CIS 832 - Knowledge Representation for the Semantic Web**Credits 3**

Knowledge representation languages for data sharing and integration, in particular the W3C Semantic Web standards RDF, OWL and SPARQL; state of the art knowledge graph and knowledge graph schema modeling process; ontology design patterns; modular ontology engineering.

Repeat for Credit

N

Requisites

Prerequisite: CIS 300

Typically Offered

Fall, Spring

CIS 833 - Information Retrieval and Text Mining**Credits 3**

Theory and practice of search engines for retrieving textual information; basic and advanced topics, with emphasis on newer technologies that go beyond simple keyword search; the use of MapReduce framework to process large collections of documents.

Note

Instructor permission.

Repeat for Credit

N

Requisites

Prerequisite: CIS 732

Typically Offered

Fall

CIS 834 - Machine Learning for Bioinformatics**Credits 3**

The course will cover some of the most important machine learning algorithms (including semi-supervised and transfer learning algorithms) and their applications to bioinformatics.

Note

Instructor permission.

Repeat for Credit

N

Requisites

Prerequisite: Either CIS 732 or CIS 734

Typically Offered

Spring-Odd Years

CIS 835 - Neuro-Symbolic Artificial Intelligence: Deep Learning and Knowledge Representation**Credits 3**

State of the art in combining deep learning with symbolic artificial intelligence approaches based on the newest research publications on the topic.

Note

Instructor permission

Repeat for Credit

N

Typically Offered

Spring

CIS 836 - Knowledge Graphs**Credits 3**

State of the art in knowledge graph based data management and applications; based on the newest research publications on the topic.

Note

Instructor permission

Repeat for Credit

N

Typically Offered

Spring

CIS 841 - Verification and Validation**Credits 3**

Practical techniques for verifying and validating software including formal verification, software testing, reliability measurement and modeling.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 771 and either or CIS 740 or CIS 744.

Typically Offered

Other

CIS 842 - Specification and Verification of Reactive Systems

Credits 3

Review of formal specification languages; architecture of concurrent and reactive systems; specification methods including: Z, Petri nets, temporal logic, state transition models; development and evaluation of system specifications; verification structures including layered systems, serialization, and predicate automata.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 771.

Typically Offered

Other

CIS 844 - Agent-Oriented Software Engineering

Credits 3

Analysis, design, and implementation of large, complex, distributed, and adaptive software systems using agent-oriented paradigm. Will survey various modeling languages and agent-oriented methodologies.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 730, CIS 740.

Typically Offered

Spring

CIS 855 - High Assurance Systems

Credits 3

Techniques for developing high assurance (safety critical, security critical, or mission-critical in nature) systems. Topics include writing requirements for safety-critical systems, formal architecture definition, risk management techniques including various forms of hazard analysis, safety systems, and verification and validation.

Repeat for Credit

N

Requisites

Prerequisites: (CIS 771) Software Specification AND Java programming skills.

Typically Offered

Spring

CIS 860 - Advanced Database Systems

Credits 3

Advanced topics in database and intelligent information systems. Possible topics include active, temporal, object-oriented, and multimedia databases, warehousing and data mining.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 761 or CIS 764.

Typically Offered

Other

CIS 861 - Data Science in Practice

Credits 3

Application of data science paradigms, tools, and protocols to solve real-world problems within science and industry.

Note

Instructor consent.

Repeat for Credit

N

Typically Offered

Spring

CIS 864 - Data Engineering

Credits 3

Advanced topics in database design and maintenance including performance monitoring, query optimization and tuning in centralized and distributed data systems.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 761 or CIS 764.

Typically Offered

Other

CIS 870 - Theory of Computability**Credits 3**

Formal models for computability; universal programs; Church's thesis; unsolvable problems and reducibilities; partial recursive functions; recursive and recursively enumerable sets; s-m-n theorem and the recursion theorem.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 770.

Typically Offered

Other

CIS 890 - Special Topics in Computer Science**Credits 2-4**

Topics of the current state-of-the-art of computer science.

Note

Prerequisite varies with the announced topic.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CIS 895 - MSE Project**Credits 0-6**

This course takes the student through the process of developing a project. This process typically takes more than one semester to complete. Includes reviews and walkthroughs of the requirements, design, and implementation.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 740 or CIS 744, CIS 748, CIS 771, and three additional credits toward the MSE degree.

Typically Offered

Other

CIS 897 - Seminar in Computer Science**Credits 1**

Introduction to computing as a discipline; the relationship of computing to other disciplines; the interaction of computing and ethics; the development of a written and oral research proposal.

Repeat for Credit

Y

Requisites

Prerequisite: full graduate standing in CIS (CR/NCR only).

Typically Offered

Fall, Spring, Summer

CIS 898 - Master's Report in CIS**Credits 1-3**

Master's Report in CIS

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CIS 899 - Research in Computer Science**Credits 1-6**

Research in Computer Science

Repeat for Credit

Y

Requisites

Prerequisite: CIS 897.

Typically Offered

Other

CIS 905 - Theory of Programming Languages

Credits 3

Formal definition languages; operational and formal semantic models; equivalence of semantic models; formal properties of programming languages.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 806.

Typically Offered

Other

CIS 920 - Research Topics in Distributed Systems

Credits 3

Topics on current state-of-the-art research in distributed systems.

Note

Permission of the instructor.

Repeat for Credit

Y

Typically Offered

Other

CIS 940 - Research Topics in Software Engineering

Credits 3

Research on one of the topics in CIS 840.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 840.

Typically Offered

Other

CIS 960 - Theory of Data Base Systems

Credits 3

Advanced topics in data base systems including distributed data bases, integrity, security, normalization, data base machines, performance models, query languages.

Repeat for Credit

Y

Requisites

Prerequisite: CIS 840.

Typically Offered

Other

CIS 990 - Research Topics

Credits 2-3

Study of current topics in computer science.

Note

Permission of the instructor.

Repeat for Credit

Y

Typically Offered

Other

CIS 999 - Research in Computer Science

Credits 1-18

Research in Computer Science

Repeat for Credit

Y

Typically Offered

Other

CLSCS 105 - Medical Terminology: Latin and Greek for Scientists

Credits 2

This course provides students with the framework and experience required to understand and use scientific and medical terminology.

Note

No prior knowledge of either Latin or Greek is required.

Course may not be applied toward the fulfillment of either language or humanities requirements for any degree.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

CLSCS 309 - Introduction to Classical Literature in Translation

Credits 3

Introduction to the canonical works of Greek and Roman literature in translation. Discussion of classical texts in English translation with ample attention paid to material culture, visual media and classical culture.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

CLSCS 310 - Introduction to Classical Mythology in Translation

Credits 3

Introduction to the mythology of Greece and Rome through examinations of their literature (in English) and material culture.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

CLSCS 501 - Topics in Classical Literature in Translation

Credits 3

A detailed survey of Greek and/or Roman literature in translation.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CLSCS 502 - Topics in Classical Studies

Credits 3

Focuses on different aspects of ancient Greek and Roman culture. Greek society and culture, Roman society and culture, Greco-Roman religion, and ancient ethnography are among the potential topics of this course.

Note

Lecture and discussions. All readings will be in English.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CLSCS 549 - Special Studies in Classics

Credits 1-5

Independent study in Classics, Latin, or Greek.

Note

Instructor consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

CMST 104 - Database Management

Credits 2

An introduction to using a database management system on

a personal computer. Students begin with elementary database commands and progress to more sophisticated database applications. Students are required to complete assignments on the computer, some of which are completed outside of class.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 108 - PC Desktop Software

Credits 3

The use and application of popular software application packages. Topics include word processors, electronic spreadsheets, database management systems, and presentation software. Students are required to complete assignments on the computer, some of which are completed outside of class.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 110 - Introduction to Visual Basic

Credits 3

Computer programming using Visual Basic for students who are not majoring in computer systems technology or web development technology. Topics include variable and constant declarations, data types, arithmetic expressions, decision structures, repetition structures, sequential files and arrays. Emphasis on problem solving and program structure.

Repeat for Credit

N

Requisites

Corequisite: MATH 100.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 115 - Graphics Software Applications

Credits 3

Introduction to popular graphics software application packages. Emphasis is on design concepts, color usage, image and concept development and creative problem solving using graphics software. Students are required to complete assignments on the computer, some of which are completed outside of class.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 135 - Web Fundamentals

Credits 3

Concepts of communications across the Internet, and the technology required to create web pages. Topics include ethical use of the web and accessibility issues for disabled visitors. In-depth coverage of web page construction and styling.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CMST 146 - Digital Photography

Credits 3

Introduces basic photographic techniques and computer assisted image manipulation. Topics include: basic camera functions, basic digital image processing, visualization and design skills and digital manipulation techniques needed in today's market place. Students have opportunities to create portfolio pieces.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CMST 183 - Computer Systems Studio I

Credits 1

Students begin a portfolio of projects that connect the topics covered in CYBR 103, CMST 135, required general education courses, and other relevant subjects.

Note

Two hours studio per week.

Repeat for Credit

N

Requisites

Corequisite: CYBR 103 and CMST 135.

Typically Offered

Fall

CMST 185 - Computer Systems Studio II

Credits 1

Students add to their portfolios projects that connect the topics covered in CYBR 250, CYBR 247, past required CMST and general education courses, and other relevant subjects.

Note

Two hours studio per week.

Repeat for Credit

N

Requisites

Corequisite: CMST 183 and CYBR 247 and CYBR 250, or CC 210

Typically Offered

Spring

CMST 190 - Information Engineering for Data Science

Credits 1

This course introduces the fundamentals of data science within an operationalized setting. Topics include: data modeling, data structures, data programming (using SQL), data wrangling, descriptive statistical analysis, and version control (Github).

Repeat for Credit

N

Requisites

Prerequisite: MATH 100, MLAS 100 or CYBR 103

Typically Offered

Fall

CMST 216 - Digital Media I

Credits 3

Hands-on experience dealing with the elements and principles of digital communications working with industry standard software for photo editing, illustration and page layout. Students have the opportunity to produce portfolio pieces.

Repeat for Credit

N

Requisites

Prerequisite: CMST 115 and CMST 137.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

CMST 252 - System and Software Fundamentals

Credits 3

An introduction to computer systems with an emphasis on systems software. Systems topics include operating systems, low-level and high-level programming languages, virtualization and an introduction to the theory of computation.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 250.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Historical Perspectives

CMST 270 - Introduction to Unix

Credits 3

An introduction to using the Unix operating system for programming and system administration. Topics include using the Unix command line interface, file attributes, editing text files, and programming with shell script and other interpreted languages.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 102 and CYBR 247.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 283 - Computer Systems Studio III

Credits 1

Students add to their portfolios projects that connect the topics covered in CYBR 180, CMST 335, past required CMST and general education courses, and other relevant subjects.

Note

Two hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 185.

Corequisite: CYBR 180 and CYBR 335.

Typically Offered

Fall

CMST 285 - Web Certificate Capstone Studio

Credits 1

Students prepare a portfolio of projects demonstrating their achievement of the student learning outcomes for the web development certificate.

Repeat for Credit

N

Requisites

Corequisite: CYBR 247

Typically Offered

Spring

CMST 290 - Scientific Programming and Machine Learning

Credits 1

This course introduces students to the field of machine learning. Students learn the algorithms which underpin many popular machine learning techniques, as well as developing an understanding of the theoretical relationships

between these algorithms. Topics include: supervised learning (regression [simple, multi, and logistic]), (classification [binary, multi, imbalanced]), and unsupervised learning (dimensionality reduction, principal components, cluster analysis).

Repeat for Credit

N

Requisites

Prerequisite: MATH 100, MLAS 100 or CYBR 103

Typically Offered

Spring

CMST 299 - Topics in Computer Systems Technology

Credits 1-18

Provides an opportunity for faculty to present computer systems technology topics.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

CMST 302 - Applications in C Programming for Engineering Technology

Credits 3

An introduction to structured program design and implementation using the C programming language. Topics include use of the C language in calculations, input, output, and file handling. Students design, implement, and test programs applicable to engineering technology majors.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 310 - Visual Basic Programming

Credits 3

An in-depth study of Visual Basic as an object-oriented language for students having had previous college-level computer programming courses. Topics include advanced database manipulation, MDI programming, creation of controls, web forms, and help files. Assignments focus on large programming projects. Students design, implement, and present a final capstone course project.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 180; and CYBR 247 or equivalent.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 315 - Introduction to System Administration

Credits 3

An in-depth study of network and server administration. Topics include network design, hardware and software selection, server and client installation, management of network services, file and network resource administration, configuration of permissions and policies, and server monitoring and tuning.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Corerequisite: CMST 252.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 317 - C# Programming**Credits 3**

An in-depth study of the Microsoft C# language and its applications. C# is a development tool within the .NET framework. Students use the language to develop a wide variety of applications including stand-alone applications and those providing access to databases and Web services.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 323 - Game Programming**Credits 3**

An introduction to computer game programming. Topics include game mathematics and physics, tile-based virtual worlds, artificial intelligence, and game graphics. Students design, develop, and present a functioning computer game as a capstone course project.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247 and PHYS 113.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CMST 326 - Page Layout and Type**Credits 3**

An intermediate course dealing with typographic design concepts, color usage, image development, idea development, and creative problem solving. Addresses typographic principles, techniques and development of a personal style to create typographic designs that are technically sound and visually interesting.

Repeat for Credit

N

Requisites

Prerequisite: CMST 216.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CMST 332 - Web Development Project**Credits 3**

Each student implements a major web site. Students apply system analysis concepts to design a working website using graphics, security, and information processing.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 335.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CMST 333 - Computer Systems/Digital Media Portfolio Defense**Credits 1**

This course prepares students to complete, evaluate, and defend their sophomore-level portfolio. Students will have the opportunity to present a collection of project-based materials and reflective information regarding assignments that demonstrate various dimensions of web development,

computer systems technology, and digital media technology.

Repeat for Credit

N

Requisites

Prerequisite: CMST 283 or CC 310

Corequisite: CMST 332

Typically Offered

Spring

CMST 336 - Digital Media Project

Credits 3

Provides sophomores with the capstone experience of developing a professional quality project in digital media. Students learn problem solving through the design process used in digital media development.

Repeat for Credit

N

Requisites

Prerequisite: CMST 216 and sophomore standing.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

CMST 341 - C++ Programming

Credits 3

An in-depth study of C++ as an object-oriented programming language for students having had previous college level computer programming courses. Students write Windows applications using classes, MFC, and managed and unmanaged code. Programs involve Windows interfacing, exception handling, database access, COM and the creation of DLLs. Each student individually completes a final capstone course project.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 344 - Internetworking

Credits 3

Concepts and principles of internetworking with TCP/IP. Topics include IP addressing, subnetting, transport services, internet architecture, routing strategies, and TCP/IP applications. Students implement and analyze various internet topologies and router configurations through hands-on activities.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 250.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 347 - Java Programming II

Credits 3

An in-depth study of Java as a web programming language. Topics include exception handling, file I/O, advanced programming techniques and data structures, Java applets, multithreaded programming, client/server communication, and database and web connectivity. Students design, implement, and present a final capstone course project.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 350 - Unix Administration**Credits 3**

The essentials of administering the Unix operating system. Topics include Unix installation and loading, an in-depth look at its file system, software installation, user configuration, handling security, modems, networking, and configuration of network services.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 250 and CMST 270.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 355 - Network Programming**Credits 3**

Concepts and techniques of developing computer programs that communicate over a network using the TCP/IP and UDP/IP protocols. The course examines the use of sockets to communicate between a client and a server focusing on application-layer protocols commonly used on the Internet. Application layer topics and protocols studied include DNS, web (HTTP, HTML, and XML), electronic mail (SMTP, MIME, POP, and IMAP) and secure communication (SSL and TLS). Asynchronous and multithreaded programming technologies are studied as client and server applications are developed.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247 and CYBR 250.

Typically Offered

Summer

K-State 8

Empirical and Quantitative Reasoning

CMST 356 - Motion Graphics Technology**Credits 3**

A continuation of previous digital media courses. Includes an exploration of the various tools and processes associated with creating digital video, animation, and motion graphics. Students the the opportunity to produce portfolio pieces.

Repeat for Credit

N

Requisites

Prerequisite: CMST 336.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

CMST 370 - Applied Data Structures**Credits 3**

A systematic study of data structures and algorithms organized around the unifying concept of data abstraction. Topics include abstract data types, stacks, queues, linked lists, trees, hash tables, heaps, sorting, and searching. The implementations of these data types using object-based constructs are studied and compared with respect to algorithms running times.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 383 - Programming and Data Structures Studio

Credits 3-6

Students complete projects that tie together topics related to large application programming. Content topics include tools and methodologies for large program development, testing strategies, data structures and other relevant subjects.

Note

Nine hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 333 and MATH 100.

Typically Offered

Fall

CMST 385 - Systems and Database Administration Studio**Credits 3-6**

Students complete projects that tie together topics related to systems and database administration. Content topics include advanced database, network infrastructure, security, multi-platform support, systems integration and other relevant subjects.

Note

Nine hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 383.

Typically Offered

Spring

CMST 420 - Advanced Database Systems**Credits 3**

An in-depth study of the theoretical foundations of database design, implementation, and management as well as social and ethical issues associated with database design. Topics include the enhanced E-R model, object-oriented model, distributed databases, advanced SQL, security, data warehousing and mining. Students design, implement, and

present a capstone course project.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 180 and level 2 programming language elective.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 445 - Network Security**Credits 3**

An in-depth study of the information and skills needed to design, install, configure, secure, and administer the interface between a LAN and the Internet. Emphasis is on designing and implementing secure systems communicating within a TCP/IP environment.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 315 or 350.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CMST 470 - Applied Algorithm Design**Credits 3**

Techniques of algorithm design including greedy, divide and conquer, dynamic programming, backtracking and branch-and-bound. Covers algorithmic solutions to problems from a variety of application areas including games, graphs and encryption. Emphasis is on programming assignments that enable students to develop their problem solving and algorithm design skills.

Repeat for Credit

N

Requisites

Prerequisite: CMST 370 and level 2 programming language elective.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CMST 483 - Emerging Technologies Studio

Credits 3-6

Students practice life-long learning and research methods by completing projects that combine previously learned material with newly emerging technologies that the students must research and analyze.

Note

Nine hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Fall

CMST 485 - Computer Systems Senior Capstone Project

Credits 6

A sequel to CMST 460 in which students work individually or in teams to develop a significant project in their area of interest. Students are expected to apply the software engineering methodologies from CMST 460, write project documentation, and make verbal presentations. Whenever feasible, real-world projects are solicited from local businesses.

Note

Nine hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 460.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

CMST 499 - Advanced Topics in Computer Systems Technology

Credits 1-18

Provides an opportunity for faculty to present advanced computer systems technology topics.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

CNRES 300 - Introduction to Conflict Resolution

Credits 3

This course is a survey of conflict resolution strategies that will provide students with the knowledge and applicable skills to be better classmates, friends, and co-workers in their future careers. It is applicable for a wide array of majors and disciplines. Emphasis will be given equally to foundational concepts of how to manage conflict more effectively, as well as in-class exercises that allow students to practice these new skills.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

K-State 8 Tag 2

Ethical Reasoning and Responsibility

CNRES 500 - Topics in Conflict Resolution and Trauma Studies

Credits 1-3

Independent study on topics in conflict resolution and trauma studies.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

CNRES 528 - Alternative Dispute Resolution Approaches

Credits 3

Through a practice-based approach, this course presents conflict resolution skills, models and procedures. Alternative dispute resolution approaches include mediation, negotiation, and facilitation. Completion of course will meet the Kansas Office of Dispute Resolution's training requirements for approval in core mediation as outlined in the Dispute Resolution Act, K.S.A. 5-509 and Rule 911.

Note
Intended for Undergraduate students sophomore or above

Repeat for Credit
N

Typically Offered
Fall

CNRES 529 - Trauma and Traumatic Stress

Credits 3

This course will introduce and review the theoretical and historical beginnings of the concept of trauma, which includes the inclusion of posttraumatic stress disorder (PTSD) as a diagnosis in the DSM III. It will highlight the other forms of recognized traumatic events and stressors that have more recently been brought to light. It will discuss various trauma reactions, effects of stressful events, as well as the treatment of trauma. Resilience and transcendence of trauma will be outlined, with an emphasis on the importance of self-care for clinicians and helping professionals working in this area.

Repeat for Credit
N

Typically Offered
Fall

CNRES 530 - Coping with Life Crises

Credits 3

The purpose of this course is to provide students with resources related to managing stress and coping with crises across the lifespan that can be utilized in both their own lives and in the lives of those families they serve. Students will be introduced to the biopsychosocial nature of stress; methods of coping with stress, anxiety, and conflict; models of effective family functioning in the presence of stress and crises and the current literature on how families cope with a variety of life transitions and crises.

Repeat for Credit
N

Typically Offered
Summer

CNRES 531 - Interpersonal Conflict Resolution

Credits 3

This course focuses on a set of interpersonal conflict resolution skills and strategies to help manage and resolve disputes. It is designed to help individuals deal with differences and address conflict on a personal level.

Note
Intended for undergraduates at the sophomore or above level.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Ethical Reasoning and Responsibility
K-State 8 Tag 2
Social Sciences

CNRES 532 - Conflict Resolution across Cultures & Contexts

Credits 3

The course explores the cultural components of conflict by examining the dynamics of interpersonal beliefs and socialization, cross cultural conflict theory, and issues related to application in a variety of settings. This course is designed to be an exercise in critical thinking, cultural exploration, and self-reflection.

Repeat for Credit

N

Typically Offered

Fall

CNRES 533 - Prevention & Intervention of Violence**Credits 3**

This course includes an introduction to a range of violence intervention and prevention approaches developed for use as the interpersonal, intergroup, and societal level. Various theories of human aggression and violence and their underlying assumptions about human nature and the causes of violence will be examined.

Repeat for Credit

N

Typically Offered

Fall, Spring

CNRES 534 - Conflict in Organizations**Credits 3**

This course focuses on the causes and sources of conflict within organizations and groups, dispute systems assessment and design, and how conflict resolution professionals work as interveners and agents of change. Students will also explore and identify their own professional consultation strengths and interests.

Repeat for Credit

N

Typically Offered

Fall

CNRES 535 - Divorce and Child Custody Mediation**Credits 3**

This course focuses on mediation as an approach for couples wishing to create divorce settlements through a cooperative, confidential, and private process. Divorce and child-custody is considered as a family problem and not a legal problem. It addresses the psychological, financial, and legal dimensions of divorce in conflict resolution settings.

Repeat for Credit

N

Requisites

Prerequisite: CNRES 528

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

CNRES 536 - Conflict and Trauma in International Settings**Credits 3**

This course study will examine the historical, political, and religious roots of conflict in an international setting. The focus of study will also include an analysis of the area's cultural traditions and exploration into the ways in which divided societies cope with attendant political, economic, and social problems. Prospects for continued and sustainable peace in the region, as well as how progress is being made, will also be examined.

Repeat for Credit

N

Typically Offered

Spring

CNRES 537 - Elder and Family Decision Making**Credits 3**

This course focuses on the specialized skills and techniques for successfully facilitating adult family conversations around issues such as living arrangements, caregiving, driving, medical decisions, family communication, financial planning, inheritance/personal property

distribution, trusts and estates.

Repeat for Credit

N

Typically Offered

Intersession

CNRES 538 - Advanced Trauma and Traumatic Stress

Credits 3

This course will examine a broad range of traumatic experiences and their associated biopsychosocial outcomes. A variety of topics including military trauma, childhood abuse, sexual assault, intimate partner violence, human trafficking, natural disasters, and terrorism, among others, will be addressed. We will also discuss various mental, emotional, and interpersonal reactions to traumatic life events, as well as traditional and alternative treatment approaches for trauma-related diagnoses. Factors that contribute to posttraumatic growth will be highlighted, with an emphasis on examining effective community-based resources for the successful treatment of traumatic stress.

Repeat for Credit

N

Requisites

Prerequisite: CNRES 529.

Typically Offered

Intersession

CNRES 539 - Grief and Loss Across the Lifespan

Credits 3

This course offers an introduction to theories of grief and loss as well as an overview of how loss affects individuals and families according to their developmental stages. Theoretical bases of study would include both individual and family-based models. Another component covers coping and treatment approaches, with a special emphasis on working with families coping with grief in the professional sphere.

Repeat for Credit

N

Typically Offered

Intersession

CNRES 599 - Conflict Resolution Practicum

Credits 3

Co-mediation training with Kansas state-approved mediators. Training consists of supervised mentoring and practice in conflict resolution.

Note

Typically includes 1-5 client direct contact hours per month, in addition to group and individual supervision (actual or role-play), reporting, and record keeping. Individual supervision will consist of faculty supervision and continued live observation of cases. Successful completion of this course will allow the student to become eligible to apply for Kansas state-approved mediator status.

Repeat for Credit

Y

Requisites

Prerequisites: CNRES 531 and CNRES 535.

Typically Offered

Fall, Spring, Summer

CNRES 700 - Topics in Conflict Resolution and Trauma Studies

Credits 0-3

Independent study on topics in conflict resolution and trauma studies.

Repeat for Credit

Y

Requisites

Prerequisite: CNRES 751

Typically Offered

Fall, Spring, Summer

CNRES 750 - Crises Across the Lifespan

Credits 3

The purpose of this course is to provide students with resources related to managing stress and coping with crises across the lifespan that can be utilized in both their own

lives and the lives of those families they serve. Students will be introduced to the biopsychosocial nature of stress; methods of coping with stress, anxiety, and conflict; models of effective family functioning in the presence of stress and crises; and the current literature on how families cope with a variety of life transitions and crises.

Repeat for Credit

N

Typically Offered

Summer

CNRES 751 - Interpersonal Conflict Skills and Strategies

Credits 3

This course presents communication theories and interpersonal skills relevant to conflict resolution, including the understanding of, analysis of, and management of conflict.

Note

Intended for Graduate Students

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CNRES 752 - Culture and Conflict

Credits 3

This course is an exercise in critical thinking, cultural exploration, and self-reflection. It explores the cultural dimensions of conflict, including the role of culture in defining conflict for individuals and groups. The dynamics of interpersonal beliefs and socialization, cross cultural conflict theory, and issues related to application are also examined.

Repeat for Credit

N

Typically Offered

Fall

CNRES 753 - Violence Prevention and Intervention

Credits 3

This course examines various theories of human aggression and violence, exploring their underlying assumptions about human nature, and the causes of violence. Included is an introduction to a range of violence intervention and prevention approaches developed for use at the interpersonal, intergroup, and societal level.

Repeat for Credit

N

Typically Offered

Spring

CNRES 754 - Organizational Conflict

Credits 3

This course provides an overview of the theories, methods, and practice issues involved in identifying and assessing sources of conflict. Students will learn about organizations, organizational development, causes and sources of conflict within organizations, dispute systems design, and how conflict resolution professionals work as interveners and agents of change.

Repeat for Credit

N

Typically Offered

Spring

CNRES 755 - Family Mediation

Credits 3

This course addresses the multidimensional aspects of divorce, including the legal divorce, the psychological divorce, and children of divorce. The second half of the semester focuses on how mediation can empower families - teens and parents - resolve their interpersonal conflicts using a neutral third party.

Repeat for Credit

N

Requisites

Prerequisite: CNRES 758

Typically Offered

Spring

CNRES 757 - Elder and Family Decision Making

Credits 3

This course focuses on the specialized skills and techniques for successfully facilitating adult family conversations around issues such as living arrangements, caregiving, driving, medical decisions, family communication, financial planning, inheritance/personal property distribution, trusts and estates.

Repeat for Credit

N

Typically Offered

Intersession

CNRES 758 - Applied Alternative Dispute Resolution

Credits 3

This course presents conflict resolution skills, models and procedures in a practice-based approach. Alternative dispute resolution approaches include mediation, negotiation, and facilitation. Completion of course will meet the Kansas Office of Dispute Resolution's training requirements for approval in core mediation as outlined in the Dispute Resolution Act, K.S.A. 5-509 and Rule 911.

Note

Intended for Graduate students

Repeat for Credit

N

Typically Offered

Fall

CNRES 759 - Foundations of Trauma and Traumatic Stress

Credits 3

This course will introduce and review the theoretical and historical beginnings of the concept of trauma, which includes the inclusion of posttraumatic stress disorder (PTSD) as a diagnosis in the DSM III. It will highlight the other forms of recognized traumatic events and stressors that have more recently been brought to light. It will discuss various trauma reactions, effects of stressful events, as well as the treatment of trauma. Resilience and

transcendence of trauma will be outlined, with an emphasis on the importance of self-care for clinicians and helping professionals working in this area.

Repeat for Credit

N

Typically Offered

Fall

CNRES 761 - International Conflict & Trauma

Credits 3

This course study will examine the historical, political, and religious roots of conflict in an international setting. The focus of study will also include an analysis of the area's cultural traditions and exploration into the ways in which divided societies cope with the attendant political, economic and social problems. Prospects for continued and sustainable peace in the region, as well as how progress is being made will also be examined.

Repeat for Credit

N

Typically Offered

Spring

CNRES 799 - Practicum in Conflict Resolution

Credits 3

Co-mediation training with Kansas state-approved mediators. Training consists of supervised mentoring and practice in conflict resolution.

Note

Typically includes 1-5 client direct contact hours per month, in addition to group and individual supervision (actual or role-play), reporting, and record keeping. Individual supervision will consist of faculty supervision and continued live observation of cases. Successful completion of this course will allow the student to become eligible to apply for Kansas state-approved mediator status.

Repeat for Credit

Y

Requisites

Prerequisite: CNRES 751 and CNRES 755

Typically Offered

Other

CNS 010 - CNS New Student 1st Year Workshop 1

Credits 0

Familiarize entering Construction Science and Engineering students with the nature of the architectural, engineering, and construction industry with an emphasis on terminology and professionalism. Information related to Construction Science and Management, department policies, student organizations, department faculty, and career opportunities will be introduced.

Note

One hour recitation per month

Repeat for Credit

N

Typically Offered

Fall

CNS 012 - CNS New Student 1st Year Workshop 2

Credits 0

Continued familiarization with the architectural, engineering, and construction industry with a stronger emphasis on terminology and professionalism. Additional Information related to Construction Science and Management, department policies, student organizations, department faculty, and career opportunities will be presented.

Note

One hour recitation per month

Repeat for Credit

N

Typically Offered

Spring

CNS 016 - Construction Seminar

Credits 0

Presentation of professional problems and practices by

students, faculty, contractors, architects, and various organizations associated with the building industry.

Note

One hour lecture a month.

Repeat for Credit

Y

Typically Offered

Spring

CNS 100 - Construction Science and Management Orientation

Credits 2

Introduction to construction science and management. Promotion of interaction and connection with the department as well as a network of academic and professional networks through the use of learning communities. Familiarize entering students with the nature of the architectural, engineering, and construction industry with an emphasis on terminology and professionalism.

Note

Two hours lecture a week.

Required for all new students during their first year in the program.

Repeat for Credit

N

Typically Offered

Fall, Spring

CNS 110 - History of Building and Construction

Credits 3

An introduction to the art and science of building. Historical review from ancient to contemporary including related construction methods, equipment, and systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

CNS 200 - Computer Applications in Engineering and Construction

Credits 2

Fundamental applications of computer programming and software using engineering and construction problems, primarily advanced use of spreadsheets with macros, data tables, embedded graphics, and presentations.

Note

Four hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite or Concurrent DEN 160: Prerequisite Sophomore standing and MATH 150, or equivalent course in trigonometry. Construction Science and Management majors only.

Typically Offered

Fall, Spring

CNS 210 - Graphic Communication I

Credits 1

Introduction to graphic communication and methods using orthographic projections, isometrics, and perspective drawings and sketches and their application to the engineering, design, and construction industry.

Note

Two hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CNS 220.

Prerequisite or Concurrent: DEN 160. Department Majors Only.

Typically Offered

Fall, Spring

CNS 220 - Construction Materials

Credits 2

Study and analysis of construction materials, their properties, selection, and use.

Note

One hour Lecture and one hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or Concurrent: MATH 150 or MATH 220.

Prerequisite or Concurrent (DEN 160 and ARE 010) or (DEN 160 and CNS 010) or (DEN 160 and ARE 012) or (DEN 160 and CNS 012).

Typically Offered

Fall, Spring

CNS 231 - Statics A

Credits 3

Composition and resolution of forces; equilibrium of force systems; application of the principles of statics to problems, including force analyses of simple structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 150 or equivalent, PHYS 113.

Typically Offered

Fall, Spring

CNS 241 - Strength of Materials and Analysis

Credits 3

Study of behavior of materials subjected to tension, compression, shear, and bending; analysis of beams and columns.

Repeat for Credit

N

Requisites

Prerequisite: CNS 231.

Typically Offered

Fall, Spring

CNS 242 - Strength of Materials Lab**Credits 1**

Tests to determine the physical properties of various structural materials. Analysis and interpretation of test data.

Repeat for Credit

N

Requisites

Prerequisite or Concurrent enrollment: CNS 241

Typically Offered

Fall, Spring

CNS 310 - Introduction to Building Information Modeling**Credits 2**

Introduction and application of building information modeling as a technology tool related to the management of the building process for projects in the engineering and construction industry.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisites: CNS 200, CNS 321.

Typically Offered

Fall, Spring

CNS 321 - Graphic Communications II**Credits 3**

Study of construction methods and procedures in the assembly of building materials.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 210, 220. Prerequisite or Concurrent: ARE 010 and ARE 012 OR CNS 010 AND CNS 012. Departmental Majors Only.

Typically Offered

Fall, Spring

CNS 325 - Construction Documents**Credits 3**

A study of reading, understanding, and analysis of documents used in construction: building codes, accessibility standards, specifications, drawings, shop drawing submittals and other related documents.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 321.

Typically Offered

Fall, Spring

CNS 330 - Site Construction**Credits 3**

Study of site construction problems and procedures, site survey and investigations, review of site plans, construction layouts, earthwork calculation, excavation/shoring methods, computer applications.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 212, CNS 200, CNS 210, CNS 220,

ENGL 200, and PHYS 113. Construction Science and Management Majors only.

Typically Offered
Fall, Spring

CNS 440 - Construction Methods and Equipment

Credits 3

Operations, costs, productivity of construction equipment. Investments/life cycle costing of the equipment. Equipment selection criteria and analysis. Construction methods.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: CNS 321, CNS 330, COMM 106, ACCTG 231, and prerequisite or concurrent CNS 241.

Typically Offered
Fall, Spring

CNS 497 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Repeat for Credit
Y

Typically Offered
Fall, Spring

CNS 499 - Honors Research in Construction Science

Credits 1-18

Individual research problem selected with approval of faculty advisor. A report is presented orally and in writing during the last semester.

Repeat for Credit

Y

Typically Offered
Fall, Spring

CNS 510 - Technology for Management of the Construction Process

Credits 2

Fundamentals and application of computer aided technology in the management of the construction process.

Note
One hour recitation and one hour lab per week.

Repeat for Credit
N

Requisites
Prerequisite: CNS 310, CNS 641, and CNS 645.

Typically Offered
Fall, Spring

CNS 524 - Steel and Timber Construction

Credits 3

Principles of design, fabrication, and erection of structural steel and timber structures in conformance with codes.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: CNS 241.

Typically Offered
Fall, Spring

CNS 528 - Concrete and Masonry Construction

Credits 3

Principles of design, fabrication, and erection of concrete and masonry structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 241.

Typically Offered

Fall, Spring

CNS 534 - Heating and Air Conditioning**Credits 3**

Principles of designing, applying, and installing heating and air conditioning systems for buildings.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 321.

Typically Offered

Fall, Spring

CNS 535 - Electrical and Lighting**Credits 3**

Basic design and construction of building electrical, lighting, and distribution systems with emphasis on the National Electrical Code and installation.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 321.

Typically Offered

Fall, Spring

CNS 536 - Water Supply and Plumbing**Credits 3**

Principles and practices of the design and layout of plumbing and fire protection, and individual waste treatment systems for buildings including code requirements and estimating.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 321.

Typically Offered

Fall, Spring

CNS 542 - Ethics and Professional Standards**Credits 1**

An application of the concepts of ethics as applied to the professional standards of the design and construction industry.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or Concurrent: CNS 440.

Typically Offered

Fall, Spring

CNS 544 - Problems in Construction Science**Credits 1-18**

A study of specific design problems under the direct supervision of a member of the construction science faculty.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered
Fall, Spring, Summer

CNS 545 - Heavy Construction Methods

Credits 3

Principles of asphalt, asphalt and concrete paving operations, concrete batch plant operations, heavy construction equipment and applications.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: CNS 325, CNS 440.

Typically Offered
Fall

CNS 550 - Construction Safety

Credits 2

Introduction to safety and safety programs, workers' compensation, OSHA organization and structure, safety policies and record keeping, safety standards. Emphasis will be on communication and job-site safety management. On-site safety inspections will be required within class presentation and written reports to be submitted.

Note
Two hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite or concurrent enrollment: CNS 535 and CNS 440.

Typically Offered
Spring

CNS 610 - Pre-Engineered Metal Buildings

Credits 2

Pre-engineered metal building systems: history, components, erection procedures and sequencing, delivery

considerations, quality control, safety, and quantity surveying and plan reading.

Note
Two hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: Professional program standing in construction science and management or graduate student in architectural engineering.

Typically Offered
On sufficient demand

CNS 628 - Precast and Prestressed Concrete Construction Management

Credits 3

Basics of concrete, principles of precast and prestressed concrete, construction operations of transportation and commercial projects, plant manufacturing, site erection, and safety procedures, and business management of a precast manufacturing plant.

Repeat for Credit
N

Requisites
Prerequisite: CNS 241 Strength of Materials and CNS 440 Construction Methods and Equipment

Typically Offered
Fall

CNS 629 - Tilt-up Concrete Structures in Construction Management

Credits 2

Basics of concrete, principles of tilt-up concrete, construction operations of tilt-up projects, planning procedures for job site erection, and safety procedures.

Note
Two hours recitation a week

Repeat for Credit
N

Requisites

Prerequisite: CNS 220.

Typically Offered

On sufficient demand

CNS 634 - Building Systems Commissioning**Credits 2**

Principles and methods of proper procedures for installing, commissioning and maintaining efficient performance of building envelope and support systems including mechanical and electrical systems.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Either CNS 534, CNS 535, and CNS 536 OR ARE 561 and ARE 562.

Typically Offered

On Sufficient Demand

CNS 641 - Construction Estimating**Credits 3**

Understanding estimating procedures, quantity surveying, specification reviews, pricing of an estimate, market analysis, subcontractor and supplier solicitation, and risk management, following the CSI format.

Note

Nine hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 325 and CNS 440.

Concurrent enrollment: CNS 645.

Prerequisite or concurrent enrollment: CNS 642.

Typically Offered

Fall, Spring

CNS 642 - Construction Management**Credits 3**

An introduction to the business of construction; study of legal considerations, contract documents, bonds and insurance. Evaluation of the characteristics of the construction firm, organization structure, and financial performance.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 440.

Typically Offered

Fall, Spring

CNS 643 - Preconstruction Services/Design Build**Credits 3**

Application of Value Engineering to the construction process, Conceptual Estimating, Onscreen take-off quantity surveying, Design-Build. Other project delivery types and their impact on the preconstruction efforts including general contractor pricing, fees, contingencies, risk, and schedule impacts.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 641, CNS 642, and CNS 645.

Typically Offered

Fall, Spring

CNS 644 - Topics in Construction Management**Credits 1-18**

Topical material of importance in the management of construction such as marketing, ethics, personnel management, etc.

Repeat for Credit

Y

Requisites

Prerequisite or concurrent enrollment: CNS 642.

Typically Offered

Fall, Spring

CNS 645 - Construction Scheduling and Cost Control**Credits 3**

Construction cost reporting and control. Construction planning, both long-term and short-interval, construction scheduling, monitoring, and controlling. Computer application.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 440 and concurrent enrollment in CNS 641.

Typically Offered

Fall, Spring

CNS 646 - Construction Financial Management**Credits 2**

Principles and applications of financial Management for the construction professional. Includes financial statements, cost control, cash flow, and risk management.

Note

Two hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 641, CNS 642, and CNS 645.

Typically Offered

Fall, Spring

CNS 655 - Current Trends in Construction**Credits 2**

Broad overview of relevant topics in the construction industry in the areas of project management, field supervision, estimating, contracting, and various other special topics, taught by industry professionals who specialize in their area of expertise.

Repeat for Credit

N

Requisites

Prerequisite: CNS 641.

Prerequisite or concurrent CNS 550.

Typically Offered

Fall, Spring

CNS 660 - Construction Operations**Credits 3**

Shop drawing and submittal processes, field and office practices, change orders, construction safety standards and practice, pre-construction planning, expediting, short-interval planning.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 542, CNS 641, CNS 642, and CNS 645.

Prerequisite or concurrent enrollment: CNS, 510, CNS 550.

Typically Offered

Fall, Spring

CNS 738 - Mechanical and Electrical Estimating**Credits 2**

Principles and practices of mechanical and electrical building systems estimating. Procedure for evaluating relative costs of different plumbing, HVAC, and electrical/lighting systems.

Note

Six hours labs per week.

Repeat for Credit

N

Requisites

Prerequisite: CNS 534 or ARE 562, CNS 536 or ARE 561, and prerequisite or concurrent enrollment: CNS 535.

Typically Offered

Fall, Spring

COMM 105 - Public Speaking IA**Credits 2**

Alternate to COMM 106. Principles and practice of message preparation, audience analysis, presentational skills, and speech criticism.

Note

Primarily granted for students whose curricula require a 2-credit hour course. Credit not granted for both COMM 105 and 106.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COMM 106 - Public Speaking I**Credits 3**

Principles and practice of message preparation, audience analysis, presentational skills, and speech criticism permitting greater practice in oral presentation.

Note

Credit not granted for both COMM 105 and 106.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COMM 109 - Public Speaking 1A, Honors**Credits 3**

Honors speech preparation and delivery; a survey of topics basic to rhetoric, communication, and linguistics.

Note

For arts and sciences honors students.

Repeat for Credit

N

Typically Offered

Fall, Spring

COMM 120 - Introduction to Human Communication**Credits 3**

An introduction to the traditions, foundations and contexts of human communication that are studied and practiced in society.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

COMM 130 - Interpersonal Communication**Credits 3**

Examination of the dynamics of face-to-face interpersonal interaction. Focus is on applying principles of relational communication.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

COMM 210 - Forensics, Debate, or Mock Trial Participation

Credits 0-1

Semester-long participation in K-State Debate, K-State Speech, or K-State Mock Trial.

Note

Consent of director of the activity

Repeat for Credit

Y

Typically Offered

Fall, Spring

COMM 260 - Introduction to Trial Advocacy

Credits 3

A hands-on introduction to communication in the legal process, with a primary focus on basic techniques attorneys use to develop and present a persuasive case.

Repeat for Credit

N

Requisites

Prerequisite: Instructor permission.

Typically Offered

Spring-Even Years

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

COMM 311 - Business and Professional Speaking

Credits 3

Principles and practice of speaking in an organizational setting. Areas of emphasis will be oral reports, interviewing, interpersonal communication, and working in groups.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105 or COMM 106.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

COMM 320 - Theories of Human Communication

Credits 3

Survey of basic theories of human communication focusing on sending, receiving, and responding to messages face-to-face.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

COMM 321 - Advanced Public Speaking

Credits 3

Advanced principles and practices of speech composition, audience adaptation, and delivery.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105 or COMM 106 or COMM 109.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

COMM 323 - Nonverbal Communication

Credits 3

Analysis of nonverbal communication in human interaction; theory and research in kinesics, proxemics, and

paralinguistics.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

COMM 325 - Argumentation and Debate

Credits 3

Basic theories of argumentation with emphasis on the construction and criticism of well reasoned and supported positions.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105 or COMM 106.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

COMM 326 - Group Communication

Credits 3

Builds conceptual knowledge and practical skills in group communication, enabling students to be more effective group members, leaders, and organizers.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105, COMM 106 or COMM 109

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

COMM 328 - Professional Interviewing

Credits 3

Investigation of interviewing as it occurs in a variety of situations, including journalistic, diagnostic, persuasive, and managerial. Emphasis on developing practical skills in planning, managing interviews, and interpreting data in the professional context.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105 or COMM 106.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

COMM 330 - Rhetoric in Civic Life

Credits 3

Introduction of rhetorical theory and application of rhetorical concepts to personal experiences of and participation in civic life.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

COMM 332 - Communication and Technology

Credits 3

Focus on social and interpersonal topics, including how emerging media technologies are understood and the history of forms of communication technology via the

Internet and mobile devices. Additional topics include diversity, political and civic engagement, intercultural communication, impression formation and management in online contexts, and relational maintenance.

Repeat for Credit

N

Typically Offered

Fall, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

COMM 399 - Honors Seminar Small Group Communication

Credits 3

Open only to qualified students in the arts and sciences honors program.

Repeat for Credit

Y

Typically Offered

Spring

COMM 419 - Intercollegiate Forensics, Debate, or Mock Trial

Credits 3

Current practices, theories, and involvement for competitive intercollegiate forensics, debate, or mock trial activity.

Note

May not be taken concurrent with COMM 210.

Repeat for Credit

N

Requisites

Prerequisite: Consent of director of the activity, and 3 credit hours of COMM 210, and junior/senior status.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

COMM 420 - Gender Communication

Credits 3

A study of gender as a variable in interpersonal, organizational, and public communication processes.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

COMM 425 - Organizational Communication

Credits 3

A survey of processes, practices, and theories of organizing and organizational communication to build conceptual knowledge and practical skill in communicating effectively in organizational contexts.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

COMM 426 - Coaching and Directing Speech Activities

Credits 3

Current practices in coaching curricular and extra-curricular speech activities with practical experience in the problems and procedures of directing a forensic program.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of general communication or theatre

courses that are 200 level or above, COMM 325, and THTRE 263.

Typically Offered
Fall

COMM 430 - Freedom of Speech

Credits 3

A study of communication and legal principles pertaining to freedom of expression, and an examination of their implications for competing interests such as public order, national security, morality, civil rights, and fairness.

Repeat for Credit
N

Requisites
Prerequisite: COMM 105 or COMM 106.

Typically Offered
Spring

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Historical Perspectives

COMM 431 - Criticism of Public Discourse

Credits 3

An examination of public influence based on study of historical and contemporary models of rhetorical criticism. The students' critical experiences will focus on a broad array of public discourse including political, social, and cultural messages.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Ethical Reasoning and Responsibility

COMM 432 - The Rhetoric of the American Presidency

Credits 3

An examination of the American presidency from a rhetorical perspective, emphasizing the symbolic resources and duties of the office and those who hold it. Special attention paid to the public discourse of recent presidents during moments of national crisis.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Historical Perspectives

COMM 433 - Communication Research Methods

Credits 3

This course provides an overview of the concepts, methods, and tools by which communication research is designed and conducted. Methods covered in this course include: focus groups, surveys, experiments, and content analysis. By the end of this term, students should be able to critically consume communication research, understand the process of using social science to solve communication problems, and have experience in conducting your own research project.

Note
In this course you will work both individually and as part of in-class teams.

Repeat for Credit
N

Typically Offered
Spring

COMM 434 - Rhetoric and Social Movements

Credits 3

A study of the scope and functions of persuasive communication in contemporary social movements.

Repeat for Credit
N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

COMM 435 - Political Communication**Credits 3**

A study of political discourse. Attention is directed to theory that encompasses political discourse as it affects political behavior.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

COMM 440 - Collaborative Communication and Event Planning**Credits 3**

Study of the role communication plays in collaborative interactions, including program/conference/event planning and civic commemorations. Application of organizational communication theory through planning, analysis, deconstruction, and critique of various collaborative events.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

COMM 442 - Theories of Human Communication Networks**Credits 3**

Examines fundamental social network theories and concepts to understand how human communication networks and relational connections shape, constitute, and influence everyday life in organizational, political, relational, and civic contexts.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

COMM 450 - Special Studies in Human Discourse**Credits 3**

A study of selected subjects in the analysis in human communication.

Repeat for Credit

Y

Typically Offered

Fall, Spring

COMM 460 - Advanced Trial Advocacy**Credits 3**

Advanced study in theory and techniques of courtroom persuasion, emphasizing the complexities of case analysis, courtroom procedures, theme development, and the use of evidence.

Repeat for Credit

N

Requisites

Prerequisite: COMM 260 and/or instructor permission.

Typically Offered

Fall-Even Years

K-State 8

Aesthetic Interpretation

COMM 465 - Communication and Conflict

Credits 3

Theoretical and applied research in communication and conflictual situations.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Ethical Reasoning and Responsibility

COMM 470 - Building Social and Cultural Connections**Credits 3**

Examines beliefs, worldviews, and communication practices related to identity, diversity, and the building of communities of belonging. Develops skills in communicating beliefs and worldviews; listening; engaging with different perspectives; and using communication processes and platforms to build inclusive and equitable communities.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

COMM 475 - Legal Communication**Credits 3**

An examination of the vital role communication plays in the practice of law, with an emphasis on communication in the courtroom.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105 or COMM 106, and instructor permission.

Typically Offered

Fall-Odd Years

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Social Sciences

COMM 480 - Intercultural Communication**Credits 3**

A study of the relationship between language and culture and its impact on human communication. Examines how language and culture differ among people and how differences are handled through the process of communication.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

COMM 499 - Honors Project**Credits 3**

Honors Project

Note

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COMM 525 - Argumentation Theory**Credits 3**

An advanced study of prominent argumentation theorists, with an in-depth examination of special topics concerning the philosophy, theory, and practice of argumentation.

Repeat for Credit

N

Typically Offered
Fall, Spring

COMM 526 - Persuasion

Credits 3

The study of communication as persuasion; examination of contemporary approaches to persuasion.

Repeat for Credit
N

Typically Offered
Spring

COMM 535 - Communication and Leadership

Credits 3

A study of the ways leadership in differing contexts is designed and exercised through communication. Constructs examined may include credibility, charisma, vision, power, myth, and public memory.

Repeat for Credit
N

Typically Offered
Spring

COMM 537 - Negotiation and Communication

Credits 3

Develops conceptual knowledge and skill in negotiation in multiple contexts and examines the constitutive nature of communication in the negotiation process.

Repeat for Credit
N

Typically Offered
Spring

COMM 542 - Relational Communication

Credits 3

A survey of theories and research on the role of communication in social and personal relationships.

Emphasis is on observing and evaluating communication behaviors using real-life media examples.

Repeat for Credit
N

Requisites
Prerequisite: COMM 311, COMM 320, COMM 130, COMM 323, COMM 326, COMM 328, or COMM 480.

Typically Offered
Fall

COMM 545 - Communication in Democracy

Credits 3

Examines the ways in which communication shapes democratic citizenship and participation in the public sphere. Builds communication skills that promote democratic citizenship and participation.

Repeat for Credit
N

Typically Offered
Spring

COMM 550 - Senior Colloquium

Credits 3

A demonstration of the mastery of vocabulary, theory, and the ability to make practical applications of the study of rhetoric and communication will be required of all senior communication studies majors. Mastery will be demonstrated by writing a senior capstone project and presenting the results of that project to the assembled communication studies faculty and majors in a required colloquium.

Repeat for Credit
N

Requisites
Prerequisite: senior standing.

Typically Offered
Spring

COMM 551 - Senior Honors Thesis

Credits 3

Honors Thesis Colloquium. Open only to seniors in arts and sciences Honors program.

Repeat for Credit

N

Typically Offered

Fall, Spring

COMM 552 - Coaching and Mentoring**Credits 3**

Develops language, skills, and perspectives on how to coach and mentor diverse stakeholders in personal and professional contexts. Explores coaching and mentoring as a communication process; applies successful coaching and mentoring communication across different contexts; and identifies the appropriateness of different approaches and requirements for stakeholder needs.

Repeat for Credit

N

Typically Offered

Spring

COMM 575 - Internship in Communication Studies**Credits 1-3**

Students will work for/within an organization during the course of a semester. Interns must complete a minimum of 100 work hours to earn course credit. The internship work experience is intended to help apply formal classroom education to "real World" work experience. Ideally internships are pre-professional and project based experiences allowing students the opportunity to make meaningful contributions to the organization. Each intern will complete a series of deliverables to the internship director as well as work under a site supervisor at the host organization. Prior to registration, the internship director must approve all internships.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

COMM 630 - Special Topics in Rhetoric and Communication**Credits 3**

Intensive study of selected topics in communication and rhetoric.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring

COMM 632 - Innovation Cultures**Credits 3**

Examines histories, trends, and trajectories in technological innovation from a communication perspective. Develops familiarity with science and technology studies as a tool for evaluating and participating in innovation cultures.

Repeat for Credit

N

Requisites

Prerequisite: COMM 332

Typically Offered

Fall, Spring

COMM 710 - Introduction to Communication Research Methods**Credits 3**

Introduction to descriptive and experimental methodologies in communication, including conceptualization and operationalization of communication concepts, strategies of research design, and logic of inquiry.

Repeat for Credit

N

Typically Offered

Fall

COMM 720 - Perspectives on Communication

Credits 3

Analysis of current perspectives on the communication process. Materials cover assumptions, principles, implications and selected research within each perspective.

Repeat for Credit

N

Requisites

Prerequisite: COMM 320.

Typically Offered

Fall-Even Years

COMM 726 - Seminar in Persuasion**Credits 3**

Survey and analysis of advanced theory and experimental studies in persuasion.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring-Odd Years

COMM 730 - Classical Rhetorical Theory**Credits 3**

Study of rhetorical theory and criticism from early Greek to Roman times.

Repeat for Credit

N

Typically Offered

Fall

COMM 732 - Contemporary Rhetorical Theory**Credits 3**

Study of major European and American contributors to rhetorical theory in the twentieth century.

Repeat for Credit

N

Requisites

Prerequisite: COMM 730.

Typically Offered

Spring

COMM 733 - Rhetorical Criticism**Credits 3**

Study of traditional and contemporary approaches to the analysis of public discourse.

Repeat for Credit

N

Typically Offered

Spring

COMM 790 - Deliberation & Dialogue Theory**Credits 3**

Explores the conceptual and theoretical underpinnings of the Dialogue, Deliberation, and Public Engagement field, including group theory, civic space, and deliberative democracy.

Repeat for Credit

N

Typically Offered

Fall

COMM 799 - Problems in Communication Studies**Credits 1-18**

Open to students in any communication studies area.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and consent of instructor.

Typically Offered

Fall, Spring

COMM 800 - Teaching Public Speaking

Credits 0-1

Seminar for graduate teaching assistants in strategies, techniques, and materials for the introductory public speaking course. Includes current practices and research in communication education. Enrollment limited to graduate teaching assistants in the Department of Communication Studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring

COMM 801 - Instructional Communication

Credits 3

Study of theory and practice of communication in the classroom including both teacher and student communication. Topics include: integration of modes of communication, language choices, power, humor, communication strategies for instruction, and impact of communication on learning.

Repeat for Credit

N

Typically Offered

Spring

COMM 810 - Research Writing in Communication Studies

Credits 1

A study of the problems of writing and rewriting the results of scholarly investigations in communication studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

COMM 814 - Graduate Studies in Leadership Communication

Credits 3

This course examines the intersections of community-engaged scholarship and leadership through practices of relationship, story, strategy, and action. Students are introduced to resources and opportunities for pursuing public engagement, community-engaged scholarship, and successful program completion.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

LEAD 814, AGCOM 814

COMM 815 - Seminar in Leadership Communication

Credits 1

This seminar provides doctoral students opportunities for collaboration and mentorship with peers, faculty, and visiting scholars, and exploration of career pathways in public engagement.

Repeat for Credit

Y

Typically Offered

Other

Crosslisted

LEAD 815, AGCOM 815

COMM 816 - Small Group Communication

Credits 3

Review literature and develop research projects pertaining to the communication processes in small task groups. Topics include group communication processes, barriers to group communication, and style-specific theories of effective group communication.

Repeat for Credit

N

Requisites

Prerequisite: COMM 326 or senior standing.

Typically Offered

Other

COMM 817 - Relational Communication**Credits 3**

A survey of theories and research on the role of communication in social and personal relationships. Emphasis is on observing and evaluating communication behaviors using real-life media examples.

Repeat for Credit

N

Requisites

Prerequisite: COMM 311, COMM 320, COMM 130, COMM 323, COMM 326, COMM 328, or COMM 480.

Typically Offered

Fall

COMM 820 - Seminar in Communication Studies**Credits 3**

Selected topics in communication studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

COMM 821 - Experimental Research in Communication Studies**Credits 3**

Descriptive and experimental methodologies pertinent to investigation in communication studies. Topics will include such techniques as content analysis, attitude scaling, and stylistic analysis.

Repeat for Credit

Y

Requisites

Prerequisite: COMM 520 or equivalent.

Typically Offered

Fall

COMM 822 - Field Research in Communication Studies**Credits 3**

Critical and interpretive methodologies pertinent to investigations in communication studies. Topics will include participant observation, unstructured interviewing, ethnography, and discourse analysis.

Repeat for Credit

Y

Typically Offered

Spring

COMM 823 - Competitive Forensic Theory**Credits 3**

Theory and study of current research in competitive debate and individual events.

Repeat for Credit

N

Requisites

Prerequisite: COMM 426.

Typically Offered

Fall, Spring, Summer

COMM 824 - Language and Social Interaction**Credits 3**

Study of the epistemological, social, and behavioral functions of language in communication. Examination of the processes by which language functions to construct one's worldview and guide individual action.

Repeat for Credit

N

Requisites

Prerequisite: COMM 320 or ANTH 220; junior standing.

Typically Offered

Spring

COMM 825 - History of American Public Address

Credits 3

Study of American speakers, from the time of Jonathan Edwards to the present, including their education, major speeches, and contributions to the rhetorical history of the United States.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and consent of the instructor.

Typically Offered

On sufficient demand

COMM 827 - Political & Corporate Speechwriting

Credits 3

A study of the principles and practice of professional speechwriting with a special emphasis on the role of speechwriting in a democratic society.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COMM 831 - Deliberation & Dialogue Process Models

Credits 3

Survey of and introduction to the variety of process models for Dialogue, Deliberation, and Public Engagement, including the following: National Issues Forums, World Cafe, Sustained Dialogue, Appreciative Inquiry, 21st Century Town Hall.

Repeat for Credit

N

Requisites

Prerequisite: COMM 790.

Typically Offered

Fall

COMM 832 - Dialogue, Deliberation, and Public Engagement: Core Skills and Strategies

Credits 3

Instruction in the assessment of situations and application of theoretical and conceptual frameworks for DDPE to real-world contexts and scenarios.

Repeat for Credit

N

Requisites

Prerequisite: COMM 790 and COMM 791.

Typically Offered

Spring

COMM 833 - Dialogue, Deliberation, and Public Engagement: Capstone Experience

Credits 3

Focuses on the individualized goals, objectives, and interests of the student, designed to integrate insights from the courses on theoretical foundations, process models, and conceptual frameworks for evaluation and design. Students will meet face-to-face with national leaders to present their research.

Repeat for Credit

N

Requisites

Prerequisite: COMM 790, COMM 791, and COMM 792.

Typically Offered

Intersession

COMM 834 - The Rhetoric of Social Movements

Credits 3

Study of the theory and criticism of social movement rhetoric. Topics may include the development of movement studies as a distinct genre of scholarship within the field of communication studies, questions and controversies in the rhetorical study of movements, and the rationale for protest tactics, from nonviolence to terrorism.

Repeat for Credit

N

Requisites

Prerequisite: COMM 330, COMM 431, or graduate standing.

Typically Offered

Fall-Even Years

COMM 835 - Leadership Communication**Credits 3**

A study of the role that public discourse plays in attaining, enacting, and constraining leadership in a democratic society.

Repeat for Credit

N

Typically Offered

Spring

COMM 837 - Practicum in Communication and Conflict**Credits 3-6**

Supervised opportunity to apply theoretical information into a self-selected conflict situation in culturally diverse settings

Repeat for Credit

N

Requisites

Prerequisite: COMM 120 and any other required course at or above 300 level.

Typically Offered

Spring, Summer

COMM 840 - Intercultural Communication**Credits 3**

A study of the relationship between language and culture and its impact on human communication. Examines how language and culture differ among people and how differences are handled through the process of communication.

Repeat for Credit

N

Requisites

Prerequisite: COMM 105 or COMM 106.

Typically Offered

Fall, Spring

COMM 843 - Communication and Technology**Credits 3**

Explains, analyzes, and evaluates technological infrastructures in the background of social, economic, and political life. Using a keywords based approach, students test varying definitions of communication technology, seek to understand the relationship between technology and culture, examine the intended and unintended consequences of technology use on society, and evaluate future possibilities for our technological society.

Repeat for Credit

N

Typically Offered

Fall or Spring

COMM 845 - Approaches to Public/Community Engagement**Credits 3**

An advanced survey of key concepts and theoretical frameworks associated with deliberative democracy and public engagement. Focus on theoretical and practical community-engaged scholarship.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

LEAD 845, AGCOM 845

COMM 850 - Political Communication**Credits 3**

Overview of theory and research in the field of political communication. Introduces students to key concepts,

research questions, and approaches in the field. Explores how political elites construct their messages and how citizens come to understand their roles in discourse. Topics covered: presidential communication, election campaign discourse, civic discourse and deliberation, and new media and civic/political engagement.

Repeat for Credit
N

Typically Offered
Fall

COMM 899 - Masters Research in Communication

Credits 1-6

A study of the relationship between language and culture and its impact on human communication.

Repeat for Credit
Y

Requisites
Prerequisite: Sufficient training to carry on the line of research.

Typically Offered
Fall, Spring, Summer

COMM 916 - Communication Theories and Engagement

Credits 3

Focus on the intersections of communication theory and engagement. Evolution of communication theories. Philosophy and theory pertaining to community-engaged research.

Repeat for Credit
N

Typically Offered
Fall, Spring

Crosslisted
AGCOM 916

COMM 945 - Social Science Research for Public Problem Solving

Credits 3

The study of how social science research and social sector evaluation can be applied to address public problems, including the identification of public problems and the critique of current evaluation methods, and applying concepts by developing an evaluation including quantitative and qualitative analysis in partnership with social sector partners.

Repeat for Credit
N

Typically Offered
Fall, Spring

Crosslisted
AGCOM 945, LEAD 945

COMM 999 - Research in Leadership Communication

Credits 1-15

Doctoral research demonstrates the candidate's ability to conduct significant original research related to leadership and communication, to analyze the information obtained from the research, and to present the results in a dissertation format appropriate to the field.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

Crosslisted
AGCOM 999, LEAD 999

COT 020 - University Honors Program

Credits 0

This course is for record keeping purposes to allow the University Honors Program and the College of Technology and Aviation to monitor and track students who are a part of the Honors Program.

Repeat for Credit
Y

Typically Offered
Fall, Spring

COT 105 - Mastering Academic Conversations

Credits 3

Actively engage students in the process of becoming successful students, scholars, and citizens. Introduction to a successful university experience through participation in interactive seminar classes and co-curricular events. Events and topics include a broad survey of the humanities, examining the impact on culture, society, and the human condition.

Repeat for Credit

N

Requisites

Prerequisite: Freshman or instructor consent.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

COT 150 - The Humanities Through the Arts

Credits 3

A general introduction to the humanities, focusing on what they are and their basic importance. Painting, sculpture, architecture, literature, drama, music, dance, film, and photography will be explored. Emphasis will be on participation, involvement, guest speakers, tours, and appreciation.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COT 175 - Introduction to Cultural Studies

Credits 3

Introductory survey of core concepts in cultural studies and dimensions of culture, including development of the field and contemporary issues.

Repeat for Credit

N

Typically Offered

Fall or Spring

COT 189 - Introduction to University Honors Program

Credits 1

An overview of the University Honors Program including directions, goals and student requirements for completion of the program.

Repeat for Credit

N

Requisites

Prerequisite: Acceptance into the Honors Program.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

COT 295 - Introductory Industrial Internship

Credits 0-6

Introductory experiential learning program in an off-campus setting. Written documentation and oral presentation of project goals, experiences, and accomplishments.

Repeat for Credit

Y

Requisites

Prerequisite: Approval of faculty internship advisor and sponsoring company.

Typically Offered

Fall, Spring

COT 298 - Academic Success Lab

Credits 0

Introduction to and practice in academic study strategies. Topics may include critical thinking, time management, research and information skills, integrity, academic and career planning and goal setting

Repeat for Credit

Y

Typically Offered

Fall, Spring

COT 299 - Problems in Arts, Sciences, and Business

Credits 1-18

Opportunity for advanced independent study in specific subject areas in Department of Arts, Sciences, and Business.

Note

Subjects are selected by the student and the instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

COT 301 - Six Sigma Analysis and Problem Solving I

Credits 1

Introduction to Six Sigma process and quality improvement methods and tools, including the Six Sigma problem-solving approach, voice of the customer, root cause and risk analysis, and process flow improvement. Emphasis on qualitative analysis and introductory statistical tools.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100

Typically Offered

Intersession

COT 302 - Six Sigma Analysis and Problem Solving II

Credits 1

Application of common statistical methods for Six Sigma

improvement projects, including data acquisition, probability, data distributions, and statistically significant change. Builds on the foundation from COT 301 Six Sigma Analysis and Problem Solving I.

Repeat for Credit

N

Requisites

Prerequisite: COT 301

Typically Offered

Intersession

COT 405 - Methods of Problem Solving for Integrated Professional Studies

Credits 3

Practice in applying creative problem solving methods to a selection of problems solicited from multiple disciplines. Analysis of student solutions will examine similarities and difference between disciplines with regard to strategic exploration, identifying and validating constraints, testing assumptions, defending choices and approaches, and making decisions. Cases are deliberately chosen such that conventional solutions are not immediately apparent, where procedural algorithms and instructional troubleshooting scripts are inadequate or unavailable, and for which exact solutions might not actually exist.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

COT 450 - Salina International Experience

Credits 0-6

Seminar and travel course including faculty-led international field experience focused on Salina Campus students' area of interest, with travel followed by a final project. The course is designed to enhance students' global and cultural awareness while adding knowledge and skill in topical issues. In addition, students will be introduced to

and immersed in historical components, both disciplinary and cultural.

Repeat for Credit

Y

Requisites

Prerequisite: Instructor consent.

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

COT 480 - Professional Conduct, Ethics, and Analysis

Credits 3

Examines the ethical foundations of professional conduct and decision-making in the workplace. Through reading and discussing ethical works, case studies, and contemporary ethical policies/procedures, students will develop the skills necessary for analysis, discourse, and ethical decision-making in a professional work setting.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

COT 490 - Survey of Cryptography Development, Principles and Practice

Credits 3

A practical survey of the principles and practice of cryptography with respect to business / government / private applications and commercial computer security systems. Benefits of cryptography as a strategic and tactical tool for effective computer security in the commercial theater of operations. Addresses current topics such as personal privacy, cryptocurrency and blockchain. Students interact with selected cryptographic machines, codes, hand-techniques and computer products developed since the

beginning of writing.

Repeat for Credit

N

Typically Offered

Fall

COT 495 - Advanced Industrial Internship

Credits 0-6

Advanced experiential learning program in an off-campus setting. Written documentation and oral presentation of project goals, experiences, and accomplishments.

Repeat for Credit

Y

Requisites

Prerequisite: Approval of faculty internship advisor and sponsoring company.

Typically Offered

Fall, Spring, Summer

COT 497 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Note

Requires consent of instructor.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COT 499 - Advanced Problems in Arts, Sciences and Business

Credits 1-18

Opportunity for advanced independent study in specific subject areas in the Department of Arts, Sciences, and Business.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

COT 632 - Radio Frequency Technology for Unmanned Systems

Credits 3

An introduction to the theory and design of electronic circuits for communications emphasizing the implementation and analysis of common radio-frequency (RF) building blocks. Topics include s-parameters, the Smith chart, component behavior, RF test equipment, computer simulation, filter design, impedance matching, amplifiers, oscillators, mixers, and demodulators. A report will be required of all graduate students.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Spring

COT 650 - Analytical and Computational Tools for Unmanned Systems

Credits 3

Ordinary differential equations, vector algebra, vector calculus, partial differential equations and the separation of variables technique for solving wave equations. Students also perform simulation and analysis using software tools including MATLAB and MATHCAD applied to Unmanned Systems.

Repeat for Credit

N

Requisites

Prerequisite: One previous calculus course and consent of instructor.

Typically Offered

Fall

COT 660 - Airport Law

Credits 3

A detailed study of how the U.S. regulatory and legal systems work in relation to airport management. This course emphasizes contract law related to the Federal Aviation Administration Airport covenants and restrictions, Federal Aviation Regulation compliance, and airport operator liability.

Repeat for Credit

N

Typically Offered

Spring

COT 661 - Airport Planning and Management

Credits 3

An overview of the Federal Aviation Regulation Part 139 airport design standard and airport master planning process. Includes a study of the role of the airport in community development. Advanced course project required.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall

COT 662 - Aviation Management

Credits 3

Provides the Professional Master of Technology student with the opportunity to gain a thorough understanding of basic aviation industry management practices in use today combined with historical perspectives. Includes case study analysis.

Repeat for Credit

N

Typically Offered

Fall

COT 663 - UAS Flight Operations Management

Credits 3

Best practices for managing complex operations of Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS) including topics on: personnel and training, regulatory/policy considerations, airspace access, operating procedures, mission planning, system acquisitions, safety, customer relations, application-specific considerations, and data handling. Emphasis on the handling of unexpected delays and challenges to normal operations.

Repeat for Credit

N

Typically Offered

Fall

COT 664 - UAS Program Management

Credits 3

Best practices for top-level management of an Unmanned Aircraft Systems (UAS) program, including topics on: strategic planning, business model development, proposals, marketing, customer and government relations, personnel management, data handling and security, export control, regulatory environment, and operating procedures.

Repeat for Credit

N

Typically Offered

Spring

COT 674 - Processing Techniques for Low-Altitude Remotely Sensed Data

Credits 3

Students learn techniques for exploring remotely sensed data using geographic information systems and image processing software. Topics include manipulation of vector and raster data, management of spatial databases, image stitching, georeferencing, orthorectification, and techniques in the use and interpretation of metadata and development of spatial analysis models useful in remote sensing applications.

Repeat for Credit

N

Requisites

Prerequisite: AVT 460 or AVT 463 or consent of instructor.

Typically Offered

Fall

COT 675 - Acquisition and Advanced Processing of LARS Data

Credits 3

Topics begun in COT 674 are further developed. Advanced topics include: multi-spectral data acquisition and processing, exploitation of full-motion video, interpretation of geospatial and remotely sensed data, geostatistical methods of data analysis, photogrammetric measurements, and an introduction to big data concepts.

Repeat for Credit

N

Requisites

Prerequisite: COT 674.

Typically Offered

Spring

COT 676 - Low-Altitude Remote-Sensing Product/Project Development

Credits 3

Building on the skills acquired in COT 674 and 675, students fly a low-altitude remote-sensing mission to obtain geospatial data to process, manipulate, and analyze as the means of developing a finished product in areas of interest to the student. Potential areas of investigation include: precision agriculture, environmental remediation, fire management, wildlife studies, or stewardship of managed ecosystems.

Repeat for Credit

N

Requisites

Prerequisite: COT 675.

Typically Offered

Fall

COT 689 - Conduct and Ethics for Cyber-Security and UAS Professionals

Credits 3

Explores the constitutional, legal, personal and public policy fundamentals associated with the field of cyber data collection, fusion, integration, and UAV surveillance.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

COT 701 - Advanced Technical Communication

Credits 3

Intensive writing practice, applying rhetorical principles to a number of genres common to non-academic professions and workplaces, including oral presentations. Introduction to allied topics such as document design and editing, and crafting technical presentations. Application of global information literacy and research methods will culminate in the preparation of a master's project proposal.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall

COT 702 - Applied Research Skills and Methods

Credits 3

Survey of qualitative and quantitative research methods; use of a range of tools to develop applied research skills focusing on literature reviews. Examines applied research concepts, methods, and skills to foster enlightened decision making in professional practice.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Spring

COT 703 - Project Management for Professionals

Credits 3

This course focuses on applied project management methodology, tools, and techniques. Topics include career aspects of project management; business factors affecting the project; project organization, planning, execution, and communications; the project life cycle; risk analysis; and best practices in project management.

Repeat for Credit

N

Typically Offered

Fall

COT 704 - Managerial Finances, Metrics, and Analytics

Credits 3

Provides an overview of an organization's financial statements, with an emphasis on the interaction between people in management positions and those statements, as well as an examination of the business investment decision-making process. Explores the use of metrics and analytics to measure and improve managerial performance.

Repeat for Credit

N

Typically Offered

Spring

COT 705 - Transformational Leadership for Technology

Credits 3

Study and application of leadership styles and common leader traits, skills and behaviors needed in technology industries and dynamic environments where innovation is a key success factor. Includes application in virtual team environments, and introduces concepts of transformational

leadership. This course enables students to build group vision, values, and commitment and to make connections between diverse organizational cultures, leadership styles, and business strategies that enable success in a rapidly changing technology world. Students develop lifelong learning networks and information sources that enable them to continue to grow as leaders.

Repeat for Credit

N

Typically Offered

Fall

COT 706 - Informatics and Technology Management

Credits 3

Provides theoretical and practical experience in using information technology to support organizational decision-making processes. Provides tools in areas such as statistics, research methods, data mining, and information technology to develop solutions tailored to business problems.

Repeat for Credit

N

Typically Offered

Spring

COT 713 - Advanced Aviation Safety Management

Credits 3

An examination of the development of safety and how safety management has become an important part of any company. Discusses Safety Management Systems and how this blueprint is becoming an integral part of most organizations, emphasizing specific governmental and corporate programs. Topics include management tools and techniques to aid in systematically controlling risk and developing a safety culture mind-set.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Spring

COT 715 - Systems Project Management

Credits 3

This course will steer students through advanced project management that includes both techniques in application portfolio management (APM) and project portfolio management (PPM). Students will construct a Scope Statement, Statement of Work (SoW), and Work Breakdown Structures (WBS). Students practice Project Evaluation and Review Techniques (PERT) and learn the Critical Path Method (CPM). Lastly, they will examine and evaluate the project progression by applying Earned Value Management (EVM).

Repeat for Credit

N

Typically Offered

Fall, Spring

COT 720 - Application of Lean Six Sigma Methods

Credits 3

Six sigma and lean tools within an enterprise to improve product and process development, production operations, and service activities.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Spring

COT 721 - Reliability Centered Maintenance of Plant Equipment

Credits 3

Reliability modeling and assessment, reliability-centered maintenance, condition monitoring technologies, and computer tools.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered
Spring

COT 731 - Electromagnetics for Unmanned Systems

Credits 3

Fundamentals of electromagnetic wave phenomena primarily using transmission line theory to study practical applications such as antennas, cables, and waveguides. Includes a treatment of EMI and related issues.

Repeat for Credit
N

Requisites
Prerequisite: Consent of instructor.

Typically Offered
Spring

COT 741 - Aerospace Manufacturing and Materials

Credits 3

An introduction to aerospace manufacturing and materials processes that focus on understanding manufacturing applied to the production of aerospace vehicles and associated materials.

Repeat for Credit
N

Requisites
Prerequisite: Consent of instructor.

Typically Offered
Fall, Spring

COT 750 - Professional Master of Technology International Experience

Credits 0-6

Seminar and travel course including faculty-led international field experience focused on Professional Master of Technology students' area of interest, with travel followed by a final project. The course is designed to enhance students' global and cultural awareness while

adding knowledge and skill in topical issues. In addition, students will be introduced to and immersed in historical components, both disciplinary and cultural.

Repeat for Credit
Y

Requisites
Prerequisite: Instructor Consent.

Typically Offered
Fall, Spring

COT 770 - Material Properties of Bulk Solids

Credits 3

Covers material properties related to bulk solids handling such as particle density, bulk density, particle hardness, surface area, particle size and shape and its distribution, porosity and permeability. Additional material property topics include moisture content, temperatures, RH, explosiveness, cohesion and adhesion, angle of internal friction, wall friction, angle of repose, time consolidation, unconfined yield strength, shear strength and more. Sampling and measurement techniques of materials are also included.

Repeat for Credit
N

Requisites
Prerequisite: Industry experience or consent of instructor.

Typically Offered
Fall

COT 771 - Storage and Flow of Bulk Solids

Credits 3

Covers topics related to storage and flow of bulk solids which include design of hopper, bin, chute, and feeders. A study of solid flow problems such as cohesive arching, ratholing, bridging, and shear tester operational principles is included.

Repeat for Credit
N

Requisites
Prerequisite: Industry experience or consent of instructor.

Typically Offered

Fall

COT 772 - Pneumatic Conveying of Bulk Solids**Credits 3**

Covers topics such as types and components of pneumatic conveying systems and its design principles. Trouble shooting, pipe wear and attrition, dust control are included.

Repeat for Credit

N

Requisites

Prerequisite: Industry experience or consent of instructor.

Typically Offered

Spring

COT 773 - Instrumentation and Safety of Bulk Solids Handling**Credits 3**

Examines various instrumentation used in bulk solids handling operation such as measurement of airflow, pressure, temperature, level and measuring techniques. Different type valves, PLC control and safety are included.

Repeat for Credit

N

Requisites

Prerequisite: Industry experience or consent of instructor.

Typically Offered

Spring

COT 774 - Mechanical Conveying of Bulk Solids**Credits 3**

Covers topics such as types and components of bucket elevator, screw conveyor, drag and belt conveying systems and their design principles. Different aspects of designing each component of these systems with examples and troubleshooting will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: Industry experience or consent of instructor.

Typically Offered

Summer

COT 780 - UAS and High Altitude Platforms(HAPS) for Wireless Communications**Credits 3**

An introductory course to HAPS technology applied in the civilian UAS sector. Covers technologies, communications, and protection of those computer communications from hostile intent. HAPS technology provides wireless narrowband and broadband telecommunications and broadcasting services to users using either aircraft (unmanned (UAS/UAV) or manned) or lighter-than-airships (LTA). Research indicates UAS to be the best alternative. These platforms are reusable and positioned at stratospheric altitudes, from approximately 12.4 miles to 31 miles (20 to 50 km).

Repeat for Credit

N

Requisites

Prerequisite: Graduate Status.

Typically Offered

Spring

COT 781 - Capstone in Systems Design and Dynamics**Credits 1-6**

Students formulate research and execute a project to gain hands-on experience under expert guidance while integrating knowledge to solve complex problems. Students write a convincing proposal for a capstone experience, gather and analyze data, draw conclusions and present results. Teams of first and second-year students may form to work on real-world projects.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

COT 792 - Problems in Cybernetics and Technology

Credits 0-6

Opportunity for advanced independent study of a specific topic in one of the following areas: aerospace, artificial intelligence, autonomous systems, data science, cyber systems, engineering, space systems, or other advanced technologies. Topics selected jointly by student and the instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

COT 839 - Integrated Systems Thesis

Credits 2

This course must be taken in three 2 credit hour courses sequentially connected across three semesters. With graduate faculty guidance, students will select and finalize a thesis chair and committee, submit the thesis proposal, develop a research roadmap, incorporate research proposal revisions, execute on approved research, make all necessary revisions to the thesis, produce and defend thesis. The systems thesis framework will focus on a) applied industry research, b) research abstract, and c) publishable research paper.

Repeat for Credit

Y

Requisites

Prerequisite: Approval of Thesis Committee Chair.

Typically Offered

Fall, Spring, Summer

CRIM 261 - Introduction to Criminology and Criminal Justice

Credits 3

An examination of crime and criminal justice. Considers the nature of crime and the academic discipline of criminology. Explores the major components in the American criminal justice system and how these reflect and are affected by norms and changes in our society. Special emphasis is placed on issues of gender, race/ethnicity, and class within crime and criminal justice.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

CRIM 301 - Topics in Criminology

Credits 1-3

Supervised independent and/or interdisciplinary study projects for Criminology students.

Repeat for Credit

Y

Requisites

Prerequisite: CRIM 361 and consent of instructor.

Typically Offered

Fall, Spring

CRIM 362 - Police and Society

Credits 3

Examines in detail the policing function in society and the role police play in the criminal justice process.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

CRIM 364 - Criminological Perspectives

Credits 3

Addresses basic concepts, theories, and research methods used in the study of crime, with an emphasis on critical perspectives on crime as a social phenomenon. The course provides an overview of the nature and extent of major categories of crime as well as the integration of current issues dealing with crime.

Repeat for Credit

N

Requisites

Prerequisite: CRIM 261

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Human Diversity within the U.S.

CRIM 367 - Real World Criminology

Credits 1

Prepares students for careers in Criminology, including learning more about potential internship placements, occupation options in the field of criminology, graduate school, and job market preparation.

Note

Required for all Criminology majors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CRIM 454 - Criminal Law and Society

Credits 3

Examines the impact of the criminal law on US society, paying special attention to the state's use and justification of violence. Concerns the law as a source of violence and inequality in US society; students will demonstrate critical thinking and reasoning, analyzing the construction of laws and interpreting implications for various groups and segments of society.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

CRIM 460 - Youth and Crime

Credits 3

Nature, extent, and causes of delinquency; characteristics of delinquents; means of prevention and treatment.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

CRIM 462 - The War on Drugs

Credits 3

This course charts the history of the US war on drugs, placing it within the context of the war on terror, mass imprisonment and the problem of police violence. Studies how policies of law and crime impact various groups and social positions within the US. Compares US policies to others within a global context.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

CRIM 463 - Gangs in American Society**Credits 3**

Covers the historical development and current status of gangs in America. Focus on gang types/forms, criminal activities and sociological impact on communities. Also examines gang control mechanisms as well as classic and modern research conducted about gangs.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

CRIM 470 - The Criminal Justice System and Family Violence**Credits 3**

A critical examination of the incidence and prevalence of family violence in society, emphasizing how the criminal justice system responds to this social problem.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

CRIM 477 - True Crime**Credits 3**

Critically evaluates the public fascination with violent crime entertainment.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

CRIM 480 - Prisons and Punishment**Credits 3**

The historical development and current status of the correctional system. Major institutional components include jails, prisons, probation, parolee, and other forms of community corrections. Modern issues such as offender and victim rights and electronic monitoring are also covered.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

CRIM 482 - Criminal Procedure and Investigations**Credits 3**

Examines the academic and applied dimensions of criminal investigations and criminal procedure. The course is designed for students interested in learning about the processes and skills involved in evidence gathering, interviews and interrogations, case processing, and preparing cases for court for a variety of criminal offenses.

Repeat for Credit

N

Requisites

Prerequisite: CRIM 361

Typically Offered

Fall, Spring

K-State 8
Social Sciences

CRIM 500 - Contemporary Issues in Criminology

Credits 1-3

Analysis of a selected criminological topic of contemporary interest. Topics vary from semester to semester.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

CRIM 550 - Cybercrime, Security, and Society

Credits 3

Critically examines the social and cultural issues surrounding technology, crime, deviance, and crime control, including hackers, digital activists, online fraudsters, cybersecurity agents, and other actors and subcultures from sociological and criminological perspectives.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Ethical Reasoning and Responsibility
K-State 8 Tag 2
Social Sciences

CRIM 552 - Sex Crimes & Society

Credits 3

Provides critical analysis of background, laws, and practices regarding sex crimes in the US. Includes diverse reference points relative to perpetrators and victims/survivors of sex crimes; legal practices and challenges; and responses related to criminal justice and social justice perspectives.

Note
Intended for Criminology majors and related fields including pre-law, pre-med, social science, sociology,

social work, anthropology, psychology, leadership, and health and human sciences

Repeat for Credit
N

Typically Offered
Spring

CRIM 562 - Study of Serial Murder

Credits 3

The course critically examines the social construction of serial murder as a phenomenon that has long existed but only recently has been polarized as a concern of the criminal justice system and the public in general. The objective of the course is to synthesize historical and social scientific analysis of serial murder, assess public and media debates centered on both offenders and victims, and evaluate the portrayal of serial murder in contemporary literature and film.

Repeat for Credit
N

Typically Offered
Spring

CRIM 568 - Criminology Internship

Credits 6-9

Involves an internship with an approved organization related to criminology or criminal justice. Includes practical experience, observational research, and a final report. Students will demonstrate an understanding of how social science methods and principles affect policies and practices in criminal justice and related organizations.

Repeat for Credit
Y

Requisites
Prerequisite: CRIM 367

Typically Offered
Fall, Spring, Summer

CRIM 569 - Field Experience in Criminology

Credits 1-3

Integrates field experience and everyday practices with relevant bodies of sociological and criminological theory and research. Students will develop analytical and interpretive skills to understand implications of criminal law and practices through direct field experience.

Repeat for Credit

Y

Requisites

Prerequisite: CRIM 367 Corequisite: Must be taken concurrent with CRIM 568.

Typically Offered

Fall, Spring, Summer

CRIM 572 - The Death Penalty

Credits 3

Studies data, public opinion, execution patterns and methods, and debates regarding capital punishment as public policy in the US, from early history to 21st century. Examines selected cases and issues such as general deterrence, methods of execution, and constitutional challenges.

Repeat for Credit

N

Typically Offered

Summer

CRIM 582 - Criminal Minds

Credits 3

Examines interaction between social forces and physical experiences, such as cognitive impairment and/or abuse. Critically reviews history of criminology and biological theories of crime; explores how remnants of these feature in current explanations of crime.

Repeat for Credit

N

Typically Offered

Intersession

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

CRIM 592 - Anatomy of Mass Murder

Credits 3

Examines a specific kind of murder, killing of four or more people in a single incident. Examine the killers' pathways, the weapons, and especially the social context of mass murder.

Repeat for Credit

N

Requisites

Recommended prerequisite: Any social science course.

Typically Offered

Fall, Spring

CRIM 599 - Senior Thesis in Criminology

Credits 3

Independent research in criminology. Students conduct original research and produce a senior thesis in criminology.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 423, CRIM 364 and instructor consent

Typically Offered

Fall, Spring

CRIM 665 - Women and Crime

Credits 3

Nature and extent of criminal offending among women and women offenders' interactions with legal and criminal justice systems; women's victimization, including rape and intimate violence; women workers in the criminal justice system, specifically in law, policing, and prison work.

Repeat for Credit

N

Requisites

Prerequisite: CRIM 261

Typically Offered

Spring

CS 819 - Veterinary Medicine in a Foreign Context

Credits 1

Lecture and discussion-based course preparing students to enroll in VCS 821. Students will investigate agricultural and veterinary medicine in a specific country.

Repeat for Credit

Y

Requisites

Prerequisite: Commitment to enroll in CS 821 International Veterinary Study Tours and Graduate Student in College of Veterinary Medicine. Additional students admitted with discretion of the faculty member leading CS 821.

Typically Offered

Spring

CS 820 - Topics in Global Veterinary Medicine

Credits 1

An overview of the role of veterinarians around the world. Topics include international uses and attitudes about animals, problems the world faces pertaining to livestock production, and social tensions. One hour lecture each week.

Note

One hour lecture each week.

Repeat for Credit

N

Requisites

Prerequisite: 1st or 2nd year standing in the College of Veterinary Medicine, or enrolled as a graduate student with instructor permission.

Typically Offered

Spring

CS 821 - International Vet Study Tours

Credits 1

Faculty-led trip for students to explore veterinary medicine in a foreign country. Prior to travel, students will learn about the country through lectures, research, presentations.

During the trip they will interact with nationals in the veterinary profession and experience the culture.

Repeat for Credit

Y

Requisites

Prerequisite: Successful completion of CS 819 in the semester immediately preceding. Enrolled as a 1st-3rd year or grad student in the College of Vet Med. Additional students admitted with discretion of faculty leading the tour.

Typically Offered

Summer

CS 822 - Introduction to Sustainable Beef Systems

Credits 1

This course provides the fundamentals of assessing sustainability in beef production systems through evaluation of aspects of sustainability pillars, people, planet and profit, in each sector of the beef value chain. The course focuses on principles of sustainable food systems, beef cattle production practices, systems thinking, and impacts of food choices.

Repeat for Credit

N

Requisites

Prerequisite: Graduate School standing.

Typically Offered

Fall

Crosslisted

VCS 822

CS 823 - Advanced Diagnostic Imaging - Small Animal

Credits 1

Case presentation/discussion of diagnostic imaging techniques used in small animal veterinary practice, including radiography, ultrasonography, nuclear imaging, magnetic resonance imaging, and computer tomography. Clinical cases will demonstrate imaging methods and technology used in the various body systems, with an emphasis on interpretation and clinical diagnosis. Students

may re-enroll for a maximum of three credits.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree.

Typically Offered

Fall

CS 824 - Topics in Small Animal Internal Medicine I

Credits 1

Various topics in small animal internal medicine will be presented. In-depth discussion of pathophysiology and recent advances in diagnostics and therapeutics. Different topics will be covered in various years at instructor's discretion.

Note

Course may be repeated with approval of instructor.

Repeat for Credit

Y

Requisites

Prerequisite: DVM degree.

Typically Offered

Fall

CS 825 - Topics in Small Animal Internal Medicine II

Credits 1

Various topics in small animal internal medicine will be presented. One topic will be covered in a one-hour conference weekly. In-depth discussion of pathophysiology and recent advances in diagnostics and therapeutics.

Note

Course may be repeated with approval of instructor.

Repeat for Credit

Y

Requisites

Prerequisite: DVM degree.

Typically Offered

Spring

CS 826 - Small Animal Endoscopy

Credits 1

Introduction to the fundamentals of small animal (canine and feline) endoscopy, including respiratory and gastrointestinal endoscopy, laparoscopy and arthroscopy. Thirteen lectures with 2 laboratories will be offered.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree and approval from course coordinator.

Typically Offered

Fall

CS 827 - Advanced Topics in Small Animal Surgery

Credits 0-18

Current and foundational information on techniques, theory, and management in small animal surgery.

Repeat for Credit

Y

Requisites

Prerequisite: DVM degree or approval on instructor.

Typically Offered

Fall, Spring

CS 828 - Wound Management and Reconstruction

Credits 1

Didactic lectures on the physiology of wound healing, advanced reconstructive techniques, and wound treatment products and technologies.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Student in the College of Veterinary Medicine

Typically Offered

Fall or Spring

CS 829 - Applied Production Medicine

Credits 1

Advanced training in agricultural production medicine. Emphasis on answering production medicine problems through the appropriate design and interpretation of research models. Course is discussion-based and facilitated by a team of faculty members. Students will be expected to participate in weekly topic discussions.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student.

Typically Offered

Fall, Spring

CS 830 - Design and Interpretation of Clinical Trials

Credits 3

Designing appropriate experimental studies to answer research questions that can be addressed in clinical and field settings, and analyzing, interpreting and communicating the results in a suitable manner.

Repeat for Credit

N

Typically Offered

Spring

CS 831 - Veterinary Ophthalmic Surgery Techniques

Credits 3

Lectures will cover ophthalmic instruments and proper surgical techniques for commonly performed ophthalmic surgeries. Cadavers will be available to practice adnexal and corneal ophthalmic surgeries.

Repeat for Credit

N

Requisites

Prerequisite: Ophthalmology resident at Kansas State University Veterinary Health Center.

Typically Offered

Spring

CS 832 - Antimicrobial Resistance in Bacteria: A One Health Perspective

Credits 1

This course addresses the concept of One Health which integrates the knowledge of the biological elements necessary for the evolution of antimicrobial resistance (AMR) in bacteria and other factors (animals, humans, environments, socioeconomic features, and behavioral changes) involved in its emergence and dissemination.

Repeat for Credit

N

Requisites

Graduate Student Standing

Typically Offered

Fall

Crosslisted

VCS 832 Antimicrobial Resistance in Bacteria: A One Health Perspective

CS 833 - Nephrology/Urology

Credits 1

Advanced studies about small animal nephrology/urology (various topics: Pathophysiology, clinical signs, differential diagnoses, diagnostic approach, and treatment consideration).

Repeat for Credit

N

Requisites

Prerequisite: DVM Degree and Graduate Student.

Typically Offered

Spring

CS 834 - Surgical Pathophysiology I – Hematology, Anesthesia and Infection

Credits 1

Designed to expose small animal surgery residents to a standard curriculum set out by the American College of Veterinary Surgeons in preparation for the Phase I Surgery Qualification examination. Assigned textbook reading covers various topics: Hematology, Anesthesia and Infection. Meet for one hour weekly with faculty to guide the resident's self-study, answer questions, and correct deficiencies.

Repeat for Credit

N

Requisites

Prerequisite: Small animal surgery resident at Kansas State University Veterinary Health Center and Graduate Student.

Typically Offered

Fall, Spring, Summer

CS 835 - Surgical Pathophysiology II – Analgesia and Wound Management

Credits 1

Designed to expose small animal surgery residents to a standard curriculum set out by the American College of Veterinary Surgeons in preparation for the Phase I Surgery Qualification examination. Assigned textbook reading covers various topics: Analgesia and Wound Management. Meet for one hour weekly, with faculty to guide the resident's self-study, answer questions, and correct deficiencies.

Repeat for Credit

N

Requisites

Prerequisite: Small animal surgery resident at Kansas State University Veterinary Health Center and Graduate Student.

Typically Offered

Fall, Spring, Summer

CS 836 - Surgical Pathophysiology III – Soft Tissue Surgery

Credits 1

Designed to expose small animal surgery residents to a standard curriculum set out by the American College of Veterinary Surgeons in preparation for the Phase I Surgery Qualification examination. Assigned textbook reading covers Soft Tissue Surgery topics. Meet for one hour weekly, with faculty to guide the resident's self-study, answer questions, and correct deficiencies.

Repeat for Credit

N

Requisites

Prerequisite: Small animal surgery resident at Kansas State University Veterinary Health Center and Graduate Student.

Typically Offered

Fall, Spring, Summer

CS 837 - Surgical Pathophysiology IV – Orthopedic and Neurosurgery

Credits 1

Designed to expose small animal surgery residents to a standard curriculum set out by the American College of Veterinary Surgeons in preparation for the Phase I Surgery Qualification examination. Assigned textbook reading covers various topics: Orthopedic and Neurosurgery. Meet for one hour weekly, with faculty to guide the resident's self-study, answer questions, and correct deficiencies.

Repeat for Credit

N

Requisites

Prerequisite: Small animal surgery resident at Kansas State University Veterinary Health Center and Graduate Student.

Typically Offered

Fall, Spring, Summer

CS 838 - Advanced Small Animal Endocrinology

Credits 2

Advanced topics in small animal endocrinology. Emphasis on comparative aspects of endocrine gland disease and its clinical manifestations in dogs and cats. Primary literature, review articles, and advanced texts will be the principle sources of information.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree.

Typically Offered

Spring

CS 840 - Communication with the Agricultural Worker

Credits 2

An elective course focused on improving communications between veterinarians and animal caretakers in production agriculture and equine industries. The course will use face to face discussions and online seminars/modules to teach communications skills with a focus on common terminology and vocabulary necessary for effective communication. Course material will involve audio-visual methods using immersion philosophy.

Repeat for Credit

N

Requisites

Prerequisite: 2nd or 3rd year standing in the College of Veterinary Medicine or enrolled as a graduate student.

Typically Offered

Fall, Spring

CS 841 - Advanced Clinical Gastroenterology

Credits 1

Advanced study of gastrointestinal structure and function with discussions of material presented applicable to the general ACVIM board examinations. Assigned journal articles will cover literature references from sources on the ACVIM reading list, as well as general physiology taken from human literature.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree and Kansas State University Graduate Student Standing.

Typically Offered

Fall, Spring

CS 842 - Advanced Clinical Hepatology

Credits 1

Advanced study of hepatology with discussions of material presented applicable to the general ACVIM board examinations. Assigned journal articles will cover literature references from sources on the ACVIM reading list, as well as general physiology taken from human literature.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree and Kansas State University Graduate Student Standing

Typically Offered

Fall, Spring

CS 850 - Research in Medicine

Credits 1-6

An attempted solution of some of the medical and parasitological problems confronting the practitioner of veterinary medicine.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of staff.

Typically Offered

Fall, Spring, Summer

CS 851 - Breeding Diseases

Credits 1-5

Advanced studies of the breeding diseases of domestic animals.

Repeat for Credit

N

Requisites

Prerequisite: D.V.M. degree or consent of staff.

Typically Offered

Fall, Spring, Summer

CS 852 - Interpretation of Radiology Studies of Body Systems

Credits 3

Advanced discussions of radiologic interpretation, indications and interpretation of alternate imaging procedures (MRI, CT, nuclear medicine, ultrasound).

Repeat for Credit

N

Requisites

Prerequisite: DVM degree or consent of department head prior to registration.

Typically Offered

Fall-Odd Years

CS 854 - Systemic Medicine I

Credits 1-3

Study of the medical aspects of diseases of the urinary, nervous, and integumentary systems and special senses.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree or consent of department head.

Typically Offered

Fall, Spring, Summer

CS 855 - Systemic Medicine II

Credits 1-3

Study of the medical aspects of diseases of the cardiovascular, respiratory, musculoskeletal and endocrine systems.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree or consent of department head.

Typically Offered

Fall

CS 856 - Large Animal Surgery Current Literature

Credits 1

In the style of a journal club, participants will present current literature related to equine and farm animal surgery. The journal articles focus on literature from the American College of Veterinary Surgeons reading list (EVJ, EVE, JAVMA, VRU, VetSurg) within the last 5 years as well as foundational literature. Clinical case scenarios will also be used to assess student knowledge. The goal of the course is to enhance students' knowledge of the current large animal orthopedic and soft tissue literature.

Repeat for Credit

N

Requisites

DVM and Large Animal Resident or Intern

Typically Offered

Fall

CS 857 - Clinical Interpretation of Equine Diagnostic Images

Credits 1

Graduate veterinary students will meet one hour weekly to review clinical equine images and review pertinent literature.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student in the College of Veterinary Medicine.

Typically Offered

Fall, Spring

CS 858 - Orthopedic Surgery

Credits 4

Fundamentals, theory, and practice concerning genetic, metabolic, infectious, neoplastic, and traumatic diseases of bones and joints.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree or consent of department head.

Typically Offered

Spring-Even Years

CS 859 - Clinical Sciences Seminar**Credits 1**

A seminar for all house officers and all Clinical Sciences graduate students.

Note

One hour seminar presentation each week. May re-enroll for total maximum of two credits.

Repeat for Credit

Y

Typically Offered

Fall, Spring

CS 862 - Theriogenology**Credits 3**

Consideration of prevention, diagnosis, and treatment of disease, and maintenance of health and productivity of the genital tract of domestic animals. Three hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in College of Veterinary Medicine or graduate student.

Typically Offered

Fall

CS 868 - Artificial Intelligence in Veterinary Medicine**Credits 1**

This elective course explores the impact of artificial intelligence on the field of medicine, with a focus on veterinary applications. Students will learn about the fundamentals of AI, machine learning, and data science,

and how these technologies are used to improve diagnostics, treatment planning, patient monitoring, and overall patient care. The course will also address ethical considerations, regulatory frameworks, and the future of AI in healthcare. Through lectures, case studies, and hands-on projects, students will gain a comprehensive understanding of AI's role in advancing medical and veterinary practices.

Repeat for Credit

N

Requisites

Graduate Student in the College of Veterinary Medicine.

Typically Offered

Fall, Spring

CS 870 - Diagnostic Methods in Feedlot Management**Credits 3**

Practical experience in feedlot operation and bovine necropsy diagnosis consisting of 40 hours in bovine necropsy and 320 hours of an on-location practicum in a cattle feedlot.

Repeat for Credit

N

Requisites

Prerequisite: Successful completion of the first-year professional curriculum in the College of Veterinary Medicine with a cumulative GPA of 3.0 or better and no grade below a C.

Typically Offered

Summer

CS 877 - Clinical Nutrition**Credits 2**

A focus on practical aspects of nutrition as it relates to performance, health and animal well-being of food-producing animals and, programs designed for health and well-being of small animals including exotic animals. Nutritional aspects of the mechanisms of health and disease are taught primarily at the individual and population level with some molecular and cellular aspects included. Designed for all students to be able to properly nourish animals in their care during their career.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student.

Typically Offered

Spring

Crosslisted

ASI 886 and AP 886

CS 890 - Clinical Science Problems**Credits 1-3**

Advanced instruction in research topics and technologies, emphasizing various clinical disciplines.

Repeat for Credit

Y

Requisites

Prerequisite: D.V.M. Degree. or dual degree students in the College of Veterinary Medicine

Typically Offered

Fall, Spring, Summer

CS 894 - Antimicrobial Resistance in Bacteria: Impact on Animal and Public Health**Credits 3**

The course addresses issues of antimicrobial resistance (AMR) in bacteria in relation to antimicrobial use through an interdisciplinary approach that integrates animal, human and environmental health.

Repeat for Credit

N

Requisites

Pre-requisite: Graduate Student

Typically Offered

Spring

CS 895 - Research Methods**Credits 1**

Discussion of research design, grantsmanship, practical

statistics, manuscript preparation, and ethics.

Repeat for Credit

N

Requisites

Prerequisite: DVM degree or consent of department head.

Typically Offered

Spring-Even Years

CS 896 - Advanced Topics in Clinical Ophthalmology I**Credits 2**

Designed to expose comparative ophthalmology residents to the source material associated with the ABVO certifying examination. Assigned textbook reading covers various topics from the major required textbook reading list. Meet with faculty to guide the resident's self-study, answer questions, and correct deficiencies.

Repeat for Credit

Y

Requisites

Prerequisite : Comparative Ophthalmology Resident at Kansas State University Veterinary Health Center and Graduate Student

Typically Offered

Fall, Spring, Summer

CS 897 - Advanced Topics in Clinical Ophthalmology II**Credits 2**

Designed to familiarize comparative ophthalmology residents with the basic format of the ABVO certifying examination. The course will include written and image recognition examinations that collectively assess the students' comprehensive knowledge of clinical ophthalmology, including medical and surgical case management. Basic vision science concepts associated with embryology, anatomy, physiology, and optics will also be reviewed. Meet to deliver mock examinations, including time to review the content, answer questions, and correct deficiencies.

Repeat for Credit

Y

Requisites

Prerequisite : Comparative Ophthalmology Resident at Kansas State University Veterinary Health Center and Graduate Student

Typically Offered

Fall, Spring, Summer

CS 898 - MS Report in Clinical Sciences**Credits 1-2**

A written report of either laboratory-based research, field-based research, or a review paper on a topic in the major field.

Repeat for Credit

N

Requisites

Prerequisite: Consent of the major professor

Typically Offered

Fall, Spring, Summer

CS 899 - Research in Clinical Sciences**Credits 1-6**

Individual research in any of the fields of Clinical Sciences.

Note

This work may form the basis for either the M.S. Thesis or the M.S. Report.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

CSD 243 - Communication Sciences and Disorders**Credits 3**

A survey of normal communication processes and communication disorders and an introduction to the fields of speech pathology and audiology that are responsible for

the clinical management of these disorders.

Repeat for Credit

N

Typically Offered

Fall, Spring

CSD 347 - Introduction to Phonetics**Credits 3**

Basic information about speech sounds and their use in human languages, including physiological and perceptual characteristics of phonetics. Phonetic transcription of Standard American English will be emphasized.

Repeat for Credit

N

Requisites

Prerequisite: CSD major, completion of 57 credit hours, 3.0 GPA.

Corequisite: CSD 442.

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

CSD 360 - Structure and Function of the Speech Mechanism**Credits 4**

Anatomy of the structures involved in speech production. The course includes histology of the larynx and an overview of speech physiology.

Repeat for Credit

N

Requisites

Prerequisite: CSD major, completion of 57 credit hours, 3.0 GPA.

Typically Offered

Spring

CSD 361 - Hearing Science

Credits 3

An introduction to hearing science concepts. Areas of focus include anatomy and physiology of the hearing mechanism, quantification of sound, sound generation, and sound transmission. Information on the role of the auditory system in the encoding and processing of simple and complex signals is also presented.

Repeat for Credit

N

Requisites

Prerequisite: CSD major, completion of 57 credit hours, 3.0 GPA

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

CSD 442 - Developmental Psycholinguistics**Credits 3**

Review of research and theory of early development of language comprehension and production, involving vocalization, phonology, morphology, syntax, semantics, and pragmatics. Includes discussion of the relationship between cognition and language, as well as other variables influencing language acquisition.

Repeat for Credit

N

Requisites

Prerequisite: CSD major; completion of 57 credit hours, 3.0 GPA.

Typically Offered

Fall

CSD 443 - Language Assessment and Intervention I**Credits 3**

The characteristics and nature of developmental language disorders in preschool-aged children, as well as general principles of language assessment and intervention are presented. Specific language assessment and intervention procedures for individuals between birth and five years old

are reviewed.

Repeat for Credit

N

Requisites

Prerequisite: CSD major, completion of 57 credit hours and an overall 3.0 GPA, including both K-State and transfer course work.

Typically Offered

Fall

CSD 446 - Speech Sound Disorders**Credits 4**

Theory, research, and principles of normal/abnormal phonetic and phonologic development, transcription of speech sound disorders assessment of speech sound disorders, and intervention for speech sound disorders.

Note

Three hours lecture and two hours lab.

Repeat for Credit

N

Requisites

Prerequisite: CSD major, completion of 57 credit hours and an overall 3.0 GPA, including both K-State and transfer course work.

Typically Offered

Spring

K-State 8

Social Sciences

CSD 515 - Laboratory in Acoustic Phonetics**Credits 1**

The study of speech perception and production through acoustic analysis. Laboratory experience in the use of computer-based speech analysis systems.

Repeat for Credit

N

Requisites

Prerequisite: CSD 347 and senior standing.

Typically Offered

Fall

CSD 549 - Clinical Procedures in Communication Disorders**Credits 3**

Orientation to clinical practicum. Opportunities for clinical observation of speech, language, and hearing evaluation and treatment. Study of diagnostic tools, treatment materials, equipment, and clinical procedures.

Repeat for Credit

N

Requisites

Prerequisite: Senior, CSD major, CSD 443, CSD 446.

Typically Offered

Fall

CSD 560 - Clinical Research in Communication Sciences and Disorders**Credits 3**

Logic and methods of clinical research with emphasis on those most frequently used in speech-language pathology and audiology. Experience reading, planning, and evaluating research.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 or equivalent and CSD 446.
Recommended Corequisite: CSD 443

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

CSD 567 - Hearing Assessment and Intervention**Credits 3**

An introduction to audiology concepts and basic audiology testing procedures. Areas covered include disorders of the auditory system, testing procedures, and audiometric interpretation.

Repeat for Credit

N

Requisites

Prerequisite: CSD major, completion of 57 credit hours, 3.0 GPA.

Typically Offered

Spring

CSD 570 - Hearing and Communication**Credits 2**

The study of habilitation and rehabilitation techniques for individuals diagnosed with a hearing disorder. Specific areas of interest include hearing evaluation techniques, speech and language development for the hearing impaired, hearing aid amplification, cochlear implants, and central auditory processing.

Repeat for Credit

N

Requisites

Prerequisite: CSD 567.

Typically Offered

Spring

CSD 580 - Neurological Basis of Communication and Swallowing Disorders**Credits 3**

Introduction to basic neuroanatomy and physiology as it relates to processes of human communication and swallowing. Learn about the nervous system and how health conditions that affect neurological function contribute to activity limitations and participation restrictions. Provides foundational knowledge for students in communication sciences and disorders and health majors about individuals who have neurologically-based communication and swallowing disorders.

Repeat for Credit

N

Requisites

Prerequisite: CSD 360 or instructor permission for a non-CSD major to substitute a comparable anatomy course.

Typically Offered

Spring

CSD 591 - Undergraduate Topics in Communication Sciences and Disorders

Credits 0-3

Review of current topics in speech-language pathology and/or audiology.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

CSD 701 - Research Experience in Communication Sciences and Disorders

Credits 1

The course furthers understanding and application of research principles in communication sciences and disorders. Students participate in scholarly activities that apply to clinical populations in speech-language pathology.

Repeat for Credit

N

Requisites

Prerequisite: CSD 560

Typically Offered

Fall, Spring

CSD 705 - Practicum in Speech-Language Pathology

Credits 1-3

Supervised practice in the use of the methods and materials of speech-language pathology.

Repeat for Credit

Y

Requisites

Prerequisite: CSD 549.

Typically Offered

Fall, Spring, Summer

CSD 706 - Practicum in Audiology

Credits 1-3

Supervised practice in the use of equipment, materials, and methods of audiology.

Repeat for Credit

Y

Requisites

Prerequisite: CSD 567.

Typically Offered

Fall, Spring, Summer

CSD 725 - Augmentative and Alternative Communication

Credits 2

This course examines the area of augmentative and alternative communication (AAC) for people across the lifespan. The etiologies and communicative needs of current and prospective users of AAC, as well as procedures for evaluation are addressed. The course includes strategies and procedures for implementing AAC systems for people who are permanently or temporarily severely communicatively impaired.

Repeat for Credit

N

Requisites

Prerequisite: CSD 360 and CSD 549.

Typically Offered

Summer

CSD 741 - Stuttering

Credits 3

Research and theory concerning etiology, characteristics, assessment, and treatment of individuals with stuttering and

related conditions.

Repeat for Credit

N

Requisites

Prerequisite: CSD 560.

Typically Offered

Fall

CSD 742 - Language Assessment and Intervention II

Credits 3

Theory and research concerning language disorders in school-aged children are presented. Specific language assessment and intervention methodologies for this population are reviewed. Dialectal and bilingual considerations for assessment and intervention are addressed.

Repeat for Credit

N

Requisites

Prerequisite: CSD 443.

Typically Offered

Spring

CSD 743 - Communication Impairments in Autism Spectrum Disorders

Credits 2

This course provides an overview of Autism Spectrum Disorders (ASD), including characteristics, diagnosis, and etiologies. Interventions used by speech-language pathologists for enhancing the communication of individuals with ASD across the lifespan will be presented, with a focus on using evidence-based practice guidelines to determine programs of treatment. Current developments and research findings related to assessment and intervention will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: CSD 443.

Typically Offered

Summer

CSD 745 - Motor Speech Disorders

Credits 3

Examines motor speech disorders that result from neurologic disease, injury, and developmental conditions. Evidence-based practices concerning evaluation and planning of intervention are addressed for dysarthria and apraxia of speech.

Repeat for Credit

N

Requisites

Prerequisite: CSD 580

Typically Offered

Fall

CSD 748 - Cleft Palate

Credits 1

An overview of communicative disorders related to cleft palate and other structurally-based conditions affecting velopharyngeal function. Research and practical knowledge related to the characteristics, assessment, and treatment of these communicative problems are addressed.

Repeat for Credit

N

Requisites

Prerequisite: CSD 360 and CSD 446.

Typically Offered

Spring

CSD 750 - Voice Disorders

Credits 3

The etiologies and characteristics of voice disorders, as well as general principles of assessment, prevention, and treatment of these disorders, are presented. The role of the speech-language pathologist in rehabilitation planning following treatment for laryngeal cancer is also addressed.

Repeat for Credit

N

Requisites

Prerequisite: CSD 360.

Typically Offered

Fall

CSD 780 - Instrumental Measurement for Clinical Application

Credits 2

This course addresses instrumentation and measurement procedures for clinical application. Emphasis is placed on measurement tools that relate to subsystems of speaking.

Repeat for Credit

N

Requisites

Prerequisite: CSD 750 or CSD 745

Typically Offered

Spring

CSD 841 - Acquired Language and Cognitive Disorders

Credits 4

Study of acquired language and cognitive-communicative disorders in adults. Content addresses research and applied knowledge concerning etiologies, evaluation, and treatment of aphasia and communication deficits that result from right hemisphere damage, dementia, and traumatic brain injury.

Repeat for Credit

Y

Requisites

Prerequisite: CSD 580

Typically Offered

Spring

CSD 844 - Dysphagia

Credits 4

Study of normal and abnormal swallowing in children and adults. Procedures for assessment, diagnosis, and intervention are explored.

Repeat for Credit

Y

Requisites

Prerequisite or Corequisite: CSD 745

Typically Offered

Fall

CSD 847 - Externship in Speech-Language Pathology

Credits 3-12

Clinical practicum in off-campus sites, including supervised experience in evaluation and treatment of children and adults with communication disorders.

Repeat for Credit

Y

Requisites

Prerequisite: CSD 705.

Typically Offered

Fall, Spring, Summer

CSD 849 - Graduate Topics in Communication Sciences and Disorders

Credits 1-3

Critical review of recent research related to measurement and modification of speech, hearing, or language deficits.

Repeat for Credit

Y

Requisites

Prerequisite: CSD 560, graduate standing, and consent of the instructor.

Typically Offered

Other

CSD 851 - Professional Issues in Speech-Language Pathology

Credits 3

An overview of current professional issues in speech-

language pathology are addressed. Primary topics include professional and ethical practices, scope of practice and service delivery, interprofessional education and interprofessional practice, diversity and cultural responsiveness, preparation for employment, and credentialing. Because this is a capstone course, the student must be within three semesters/terms of the graduate program.

Repeat for Credit
Y

Requisites
Prerequisite: CSD 705 and consent of instructor.

Typically Offered
Spring

CSD 897 - Graduate Seminar in Communication Sciences and Disorders

Credits 1-3

Advanced course providing critical analysis of recent theory and research in a designated topic area.

Repeat for Credit
Y

Requisites
Prerequisite: CSD 560 and consent of the instructor.

Typically Offered
Summer

CSD 899 - MS Research in Communication Sciences and Disorders

Credits 1-8

Individual research problems in communication sciences and disorders which may form the basis for the master's thesis or report.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

CYBR 010 - Cyber Systems Seminar

Credits 0

CSDD Faculty and Senior-standing students will lead discussions and activities covering topics such as creative problem solving; empathy, ideation, prototyping, and testing as means to innovate discovery in diverse fields.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

CYBR 103 - Computing Principles

Credits 3

Fundamental concepts of computer science and computational thinking. Topics include the use of abstraction, problem analysis, data representation, algorithms and programming. Students learn to use creative processes to develop computational artifacts. Student activities are designed to appeal to a broad audience, including those underrepresented in computing.

Repeat for Credit
N

Requisites
Prerequisite: Experience with PC software.

Typically Offered
Fall, Spring

K-State 8
Empirical and Quantitative Reasoning

CYBR 137 - Principles of Interactive Digital Storytelling

Credits 3

This course explores the frontier of narrative innovation and uncovers the unique qualities and capabilities of immersive technologies such as virtual, augmented, and mixed reality in crafting captivating stories. Students will explore theoretical and practical dimensions of designing immersive narratives, learning how to leverage sensory engagement and spatial storytelling techniques to create compelling virtual environments. Students will have a well-rounded understanding of the principles underlying

interactive and immersive storytelling and will be equipped with the skills to create profound and engaging narratives within these revolutionary digital landscapes.

Repeat for Credit

N

Typically Offered

Fall or Spring

CYBR 163 - Fundamentals of Design Thinking

Credits 3

Students learn how to use the design thinking process to solve problems creatively, collaboratively and empathetically. Additionally, the course equips students with the knowledge of the processes and techniques used to solve problems and innovate in the workplace.

Repeat for Credit

N

Typically Offered

Fall, Spring

CYBR 180 - Introduction to Database Systems

Credits 3

An introduction to properties and design principles of relational databases. Topics include database terms, E-R Modeling, relational table design and normalization, the relational algebra, Structured Query Language, and the database life cycle. Laboratory work includes the design and implementation of a database.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

CYBR 210 - Interactive Media Development

Credits 3

In this course, students will learn to create visually rich interactive experiences. It is a course in programming graphics and media, but it is also a course on the relationship between ideas and code. Students will explore topics in math and physics by building programs that simulate and visualize processes in the natural world. Assignments will include major programming projects, such as building a virtual world inhabited by digital characters that display observable behaviors.

Repeat for Credit

N

Typically Offered

Fall or Spring

CYBR 247 - Programming I

Credits 3

Programming foundations and development of simple video games using a game engine. Topics include programming fundamentals, syntax and semantics, expressions, control statements, object-oriented programming, classes, functions, streams, game engine basics, and visual scripting concepts.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 103.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

CYBR 250 - Hardware and Network Fundamentals

Credits 3

An introduction to computer systems with an emphasis on the internal workings of computer and network hardware. Hardware topics include data representation in binary, digital logic and the Von-Neumann architecture. Network topics include local-area and wide-area networks, topology, protocols and transmission media. Student activities include proper hardware configurations for various

applications.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Historical Perspectives

CYBR 280 - Applied Mathematics for Cyber Systems

Credits 3

This course builds on the foundations of algebra and trigonometry with a focus on mathematical topics used in computer graphics programming. Topics include digital data storage, numerical accuracy and stability, mathematical notation, formal logic, discrete math, sets, implementation of computational algorithms, proof theory, probability and statistics, numerical methods, an introduction to linear algebra with an emphasis on geometric transformations and the kinematics of serial-link systems, difference equations and Markov matrices, and an introduction to projective geometry.

Repeat for Credit

N

Requisites

Prerequisites: MATH 100, MATH 150, CYBR 103

Typically Offered

Fall or Spring

CYBR 301 - Immersive COOP Studio I

Credits 3

Cooperative education is a work experience designed to supplement the educational process. Students will engage in on-campus activities designated as cooperative education, including relevant industrial experience,

entrepreneurial activities, as well as faculty-supervised research and innovation opportunities.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 210

Typically Offered

Summer

CYBR 310 - 3D Animation and Asset Production for XR

Credits 3

This course provides an overview of 3D game asset production. Basic ideas learned within the first asset production course are also revisited within the 3D environments. Topics covered include modeling, texturing, skinning and animation. Emphasis is put on low polygon modeling techniques, best practices in game art production, and effective communication strategies between artists, programmers, and designers.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 332

Typically Offered

Fall or Spring

CYBR 320 - Foundations of Interactive Narratives

Credits 3

This course focuses on the major elements of narrative for interactive environments. Students in this course explore the basics of narrative in the context of interactive games and media, with examination of digital storytelling in games and interactive environments of several varieties. Branching narratives, hypertext, multi- and non-linear concepts are also explored with an emphasis on balancing immersive and interactive aspects of digital narrative.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 137

Typically Offered

Fall or Spring

CYBR 322 - Multi-platform Interactive Media Design

Credits 3

Interactive media applications are no longer restricted to personal computers. They can now be found on many distinct hardware platforms including mobile, tablet, wearable, and spatial computing devices. In this course, students will learn to design, prototype and develop media rich interactive experiences that can be deployed to a wide variety of hardware devices. Programming projects are required.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 210. Corequisite: CYBR 247

Typically Offered

Fall or Spring

CYBR 330 - Interactive Game and Audio Design

Credits 3

This course provides students with exposure to the design, creation and production of audio in interactive applications and computer games. Students will become familiar with the use of sound libraries, recording sounds in the studio and in the field, generating sound with synthesizers, and effects processing. Students will create sound designs for interactive media, integrating music, dialog, ambient sound, sound effects and interface sounds within interactive programs.

Repeat for Credit

N

Requisites

Prerequisites: CYBR 137 and CYBR 210

Typically Offered

Fall or Spring

CYBR 332 - 3D Design and Modeling for XR

Credits 3

This course focuses on the digital composition of three-dimensional forms and the relationship to space in an XR environment. The course covers methods for 3D modeling and problem-solving. Students will build a toolkit around topics such as 3D design principles, materials, and building processes. Additionally, an awareness of idea development and design research will be explored throughout the course.

Repeat for Credit

N

Typically Offered

Fall or Spring

CYBR 335 - Programming II

Credits 3

Help students master basic concepts and become competent coders. Topics include object-oriented programming, pointers, inheritance, recursion, sorting and search algorithms, and advanced concepts such as overloading and memory management. Covers leveraging artificial intelligence in a game engine and explores various project types such as simulation, animation, and gaming.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 103 and CYBR 247.

Corequisite: CYBR 180.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CYBR 357 - Computer Vision for Immersive Systems

Credits 3

Computer vision for immersive systems is a comprehensive course that explores how machines interpret visual data. This multidisciplinary subject combines elements of artificial intelligence, machine learning, image processing, and computational models to replicate human visual perception. Students delve into algorithms for object detection, facial recognition, and scene understanding,

among others. Emphasizing both theoretical understanding and practical application, the course fosters innovation in areas like autonomous systems, robotics, extended and augmented reality.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 247

Typically Offered

Fall or Spring

CYBR 360 - Foundations of Game Engine Design and Development

Credits 3

This course builds on the geometric transformation and projective geometry concepts of the Applied Mathematics for Cyber Systems course to provide students with theory and practical skills in game engine design. Topics include the graphics pipeline as it influences engine design, hardware principles and the relationship to game engine construction, mathematical principles involved in game engine design, scene graph construction and maintenance, texture and materials management, collision systems, physics systems, particle systems, and control systems. Furthermore, this course will examine software and toolsets that assist game engine designers in their tasks. Students will be expected to design and implement a game engine in teams as well as properly document their design and development strategy.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 280

Typically Offered

Fall or Spring

CYBR 365 - User Experience (UX) Design for Immersive Systems

Credits 3

This course is an introduction to User Experience (UX) Design in the field of Digital Media and Immersive Systems. The course teaches and prepares students on how to use techniques of discovery and evaluation in the UX

design process. Students will learn how to use digital toolkits to gather information about what users need within a UX framework and how to design and model interfaces based on UX Design best practices.

Repeat for Credit

N

Requisites

Corequisite: CYBR 137

Typically Offered

Spring, Summer

CYBR 366 - Cyber Security Operations

Credits 3

Cyber security operations is an immersive course diving into the complex world of computer networks, digital security, information security (INFOSEC) and cyber threats. Covering topics from system risk assessments, threats, vulnerabilities, impact, effective countermeasures, and end-to-end communications security (COMSEC); students learn to build robust security solutions, protect PII and information/data to national critical infrastructure, and combat cybercrime. Ideal for future cyber technology professionals, the course merges theory with hands-on labs, ensuring students gain crucial practical experience in this increasingly vital and rapidly evolving field of immersive cyber systems.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 250

Typically Offered

Fall or Spring

CYBR 391 - Data Structures and Algorithms for Cyber Systems

Credits 3

This course focuses upon the application of data structures and associated algorithms to the development of software applications. Topics include interfaces, design patterns, arrays, stacks, queues, lists, trees, hash tables, graphs, recursion, data structure search and traversals, and dynamic programming. The software design patterns related to graphical applications is emphasized. Programming

assignments are a required part of this course.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 280. Corequisite: CYBR 335

Typically Offered

Fall or Spring

CYBR 401 - Immersive COOP Studio II

Credits 3

Cooperative education is a work experience designed to supplement the educational process. Students will engage in on-campus activities designated as cooperative education, including relevant industrial experience, entrepreneurial activities, as well as faculty-supervised research and innovation opportunities.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 301

Typically Offered

Summer

CYBR 443 - Interactive Systems Design for Virtual Reality (VR)

Credits 3

This project-based course is an investigation of VR as an illustrative, imaging, and graphical generation medium. It develops foundational design skills in immersive media creation, editing, compositing, layout and visual design for production. Emphasis will be on the application of visual design organization methods and principles for virtual reality media.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 210 and CYBR 280. Corequisite: CYBR 360

Typically Offered

Fall or Spring

CYBR 445 - Interactive Systems Design for Augmented Reality (AR)

Credits 3

Through project-based studies, this course explores perceptual understanding, including aesthetics, graphic form, structure, concept development, visual organization methods and interaction principles for AR media. Students will design immersive and dynamic AR solutions to communication problems for interactive projects. Students will focus on creating appropriate and usable immersive design systems through the successful application of design theory and best practices.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 210 and CYBR 280. Corequisite: CYBR 360

Typically Offered

Fall or Spring

CYBR 455 - Human Computer Interactions for Cyber Systems

Credits 3

Explores psychology and computing convergence in the design of cyber systems for human use. Focuses users' various sensory, motor, and cognitive abilities to use technology. Discusses predictive modeling, heuristic evaluation, interpretive methods, experimental testing, information presentation, task analysis, prototyping and the iterative design cycle, user interface implementation, and interface evaluation.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 280 and CYBR 335. Corequisite: CYBR 360

Typically Offered

Fall or Spring

CYBR 457 - Intelligent Spatial Computing Systems

Credits 3

Students will engage in the development and application of spatial computing and machine learning technologies. Additionally, students will create interactive digital media systems that intelligently perceive and interconnect with the physical world. The curriculum blends theoretical foundations with real-world project work.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 280 and CYBR 335. Corequisite: CYBR 360

Typically Offered

Fall or Spring

CYBR 459 - Real-time Computing Systems**Credits 3**

Introduces design and applications of real-time computing systems. Explores traditional hard real-time concepts, design, and implementation to ensure timing guarantees and safety. Develop a deeper understanding of real-time aspects of system components such as OS, memory, scheduling, communication, timing and fault management.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 280 and CYBR 335. Corequisite: CYBR 360

Typically Offered

Fall or Spring

CYBR 460 - Software Engineering for Intelligent Cyber Systems**Credits 3**

Project creation, from concept to final output, and provides insights into workflows, tools, and techniques. Discusses integrations that streamline workflows by providing a single platform for real-time management of projects, assets, tasks, and versions. Track the progress of assets through the pipeline, implementation and testing strategies, software principles, and metrics. Delves into more advanced topics like intelligent systems and case studies

from industry professionals.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 335

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

CYBR 495 - Immersive Cyber Systems Capstone I**Credits 3**

Through formal studies and perceptual understanding, including aesthetics, graphic form, structure, concept development, visual organization methods and interaction principles, students will design immersive and dynamic solutions to communication problems for interactive projects. Students will focus on creating appropriate and usable immersive design systems through the successful application of design theory and best practices.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 360

Typically Offered

Fall or Spring

CYBR 497 - Immersive Cyber Systems Capstone II**Credits 3**

This course is designed to engage the ISDD major in a capstone production experience. The instructor will form interdisciplinary student teams that will design, plan, prototype, and implement immersive systems projects. Student groups are required to test their product with users and provide written feedback and analysis. Students will be evaluated on individual contributions and their team's final capstone project.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 495

Typically Offered

Fall or Spring

CYBR 601 - Introduction to Cybernetic Modeling and Simulation**Credits 3**

Students will learn various cybernetic modeling and simulation methods to be applied within the context of complex integrated systems. Multiple simulation techniques and methodologies will be covered. This includes: Model Based Systems Engineering, Agent-Based Modeling, Discrete Event Simulation, and System Dynamics Simulation

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall, Spring, Summer

CYBR 603 - Integrated Systems Architecture**Credits 3**

Students are introduced to the principles and methods of Systems Architecture and includes: the resolution of ambiguity to identify system goals and boundaries; the creative process of mapping form to function; and the analysis of complexity and methods of decomposition and re-integration. Both heuristic and formal methods are covered within the context of this course.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

CYBR 680 - Cyber Systems and Risk Analysis**Credits 3**

An introductory course in Cyber Systems history, elements, regulations, operations, use of geospatial data; automation, safety issues; detect and avoid systems; sensors and payloads, human factors, and future. Special attention to Cyber Security Risks, Threats, Impact, Vulnerabilities, and Countermeasures will be identified. The Ryan-Nichols Risk Assessment equations will be used for qualitative risk analysis of threats so identified.

Repeat for Credit

N

Typically Offered

Fall

CYBR 682 - Open Source Cyber Surveillance**Credits 3**

This course questions the technical gaps, Intelligence Community (IC) assumptions, and important legal issues related to open source cyber surveillance with emphasis on Cyber Systems activities/deployment. Topics addressed include the responsible, legal, and ethical use of data and information gathered from the use of unmanned, semiautonomous systems, web data mining, social networks, and other modern technological systems.

Repeat for Credit

N

Typically Offered

Fall

CYBR 684 - Advanced Topics in Cyber Data Fusion**Credits 3**

This course is scenario-based, applying cyber surveillance techniques and analysis of collected data to realistic, terrain-oriented problems. Topics include the digital soldier and sailor, 360-degree battlefield awareness and the use of semiautonomous and fully autonomous technologies. Risk Assessment and Cyber Security countermeasures are the "glue" to successful implementation of data fusion techniques. The Ryan-Nichols Risk Assessment equations and other methods will be used for qualitative risk analysis of identified Cyber Threats.

Repeat for Credit

N

Typically Offered
Spring

CYBR 686 - Risk Management for Cyber Operations

Credits 3

Cyber operations is focused on performing defensive and offensive security tasks to help assess organizational security postures of many government agencies. In this course, students will explore risk management strategies in both Defensive Cyber Operations (DCO) and Offensive Cyber Operations (OCO), as well as the tasks performed by each. Students will also be introduced to the Cyber Operations Cycle and its phases as well as the responsibilities of each member and their role within offensive and defensive teams.

Repeat for Credit
N

Typically Offered
Spring

CYBR 688 - Sense and Avoid Technologies in Aerospace Systems

Credits 3

An advanced course in Sense and Avoid (SAA) technologies for Aerospace Systems. SAA is an extremely important concept and is the main obstacle for wider application of Aerospace Systems in non-segregated airspace related to traffic safety in civilian and military/defense domains. This course presents the state-of-the-art research results from British, American, Australian and European universities, as well as corporate organizations such as Boeing and MITRE.

Repeat for Credit
N

Typically Offered
Fall

CYBR 707 - Research Methods, Design, and Analysis

Credits 5

Survey of qualitative, quantitative, and design science

research methods; using a range of tools to develop applied research skills focusing on research planning, roadmap development, systematic review, experimental design, testing, journal publication, and patent creation.

Repeat for Credit
N

Typically Offered
Fall, Spring

CYBR 708 - Cybernetic Systems Design and Dynamics

Credits 3

Students survey and apply cybernetic techniques in analyzing and modeling complex systems. Requirements are derived in various domains and abstracted at conceptual, logical, and physical levels. Process, data, and state modeling are applied through industry projects that follow various systems development lifecycle."

Repeat for Credit
N

Typically Offered
Fall, Spring

CYBR 710 - Advanced Data Analytics for Cybernetic Systems

Credits 3

This course prepares students to gather, describe, and analyze data, and use advanced statistical tools to make decisions on operations, risk management, finance, marketing, etc. Analysis is done targeting economic and financial decisions in complex systems that involve multiple partners. Topics include probability, statistics (hypothesis testing, regression), clustering, decision trees, and forecasting.

Repeat for Credit
N

Requisites
Prerequisite: Prior experience in programming and statistics.

Typically Offered
Fall, Spring

CYBR 751 - Cyber Defense Methods

Credits 3

The course explores defense-in-depth techniques of layering people, process and technology controls to secure the enterprise. Topics include information security law, ethics, security concepts and mechanisms; security technologies; authentication mechanisms; mandatory and discretionary controls; basic cryptography and its applications; digital forensics, biometrics database security, intrusion detection and prevention, anonymity and privacy issues for information systems.

Repeat for Credit

N

Typically Offered

Fall, Spring

CYBR 760 - Aerospace Cybersecurity Studio

Credits 3

The course provides a culminating experience for majors involving a substantive cybersecurity project that demonstrates a synthesis of learning accumulated in the major, including broadly comprehensive knowledge of the discipline and its methodologies. Students are required to synthesize, architect, design, and present applied cyber operations techniques within an industry context.

Repeat for Credit

N

Typically Offered

Fall, Spring

CYBR 780 - Design and Operations for Cyber Human Systems

Credits 3

This course will introduce students to the intelligent systems approach to designing, building, and operating complex cyber human systems; requirements, functional decomposition, systems architecting, analysis of alternatives, project life cycle modeling, cost analysis, and technical performance measurement.

Repeat for Credit

N

Typically Offered

Fall or Spring

CYBR 782 - Social Computing Dynamics and Cyber Human Systems

Credits 3

This course will orient students towards the Cyber Physical Social Systems (CPSS) paradigm. Students will be engaged in CPSS thinking, system dynamics, urban policy analysis, and social computing applications to organizational trust and operations. Additionally, students will be introduced to key principles of cyber systems, cybernetic systems theory, technological integrations, cyber marketing patterns, and technology adoption.

Repeat for Credit

N

Typically Offered

Fall

CYBR 783 - Interaction Design for Extended Reality Environments

Credits 3

Students in this course will work on the interaction design of dialogues for interactive extended reality environments. The course will explore the psychological, physiological, linguistic, and perceptual factors of immersive environments. Students will learn the advantages and disadvantages of various interaction techniques, command language syntaxes, and data presentations.

Repeat for Credit

N

Typically Offered

Spring

CYBR 790 - Spatial Computing for Virtual Environments

Credits 3

Covers tools and techniques for modeling, simulation, visualization and analysis of physical and virtual systems with an emphasis on multi-domain environments. Examples include airplanes, helicopters, trains, ships, cars, submarines, tanks, construction equipment, weapon

systems, air traffic control, flight simulation, and gaming. Development of models towards immersive augmented and virtual reality simulations will also be explored.

Repeat for Credit

N

Requisites

Prerequisite: CMST 190 and CMST 290 or an equivalent undergraduate course in computing principles

Typically Offered

Fall

CYBR 793 - Computer Geometry for Modeling

Credits 3

Covers numerical and computer representations of curves and surfaces. This includes but is not limited to: geometric data management, interpolation methods, graph-based models, boolean models, solid geometry modeling, cubic B-splines, Bezier curves and surfaces. Additionally, industry applications towards robotics, computer graphics, and immersive systems development will be explored.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 790

Typically Offered

Fall

CYBR 795 - Machine Learning for Simulations

Credits 3

Fundamental concepts and techniques of modeling, simulating, visualizing, and analyzing complex real-world quantitative and qualitative systems of systems by using artificial intelligence, knowledge acquisition and representation, reasoning, planning, machine learning, expert systems, intelligent agents and multi-agent systems, and search strategies; emphasizes practical applications for creating intelligent simulations.

Repeat for Credit

N

Requisites

Prerequisite: CYBR 790

Typically Offered

Spring

CYBR 799 - Special Topics in Cyber Systems

Credits 0-6

Offered on sufficient demand. Advanced topics in the science, technology, or engineering of cyber systems.

Repeat for Credit

Y

Requisites

Prerequisite: Varies with announced topic.

Typically Offered

Fall, Spring, Summer

CYBR 801 - Prototyping for Advanced Immersive Systems

Credits 3

Students will be given the opportunity to develop immersive experiences for high-end, experimental, and prototype equipment that is only available to students in this course. Students will learn how to work with complex immersive equipment systems and early access software in a collaborative online studio environment.

Repeat for Credit

N

Typically Offered

Spring

CZECH 101 - Czech for Travelers

Credits 2

Introduction to the Czech language with emphasis on everyday expressions and vocabulary. History, social life, politics and other cultural issues are also introduced.

Note

Recommended for students participating in study abroad programs.

Repeat for Credit

N

Typically Offered

Other

DANCE 110 - Breathe, Move, Be

Credits 3

Through gentle movement, body awareness and breathing exercises, this course introduces students to the holistic well-being, movement efficiency and creative choice-making that are the result of somatic movement education. A wonderful foundation for any movement practice and excellent recuperation from the demands of academic life, this course is accessible to those with no prior movement training and prioritizes self-knowledge, acquired through the living body.

Repeat for Credit

Y

Typically Offered

Fall or Spring

K-State 8

Aesthetic Interpretation

DANCE 115 - Yoga for Restoration

Credits 3

Improve balance, flexibility and body awareness through an exploration of Yoga postures and breathing exercises. Excellent cross-training and recuperation for performers and athletes, this course also serves anyone seeking to strengthen their body to calm their mind. Key alignment principles and standard modifications to increase or decrease difficulty will be introduced, as will be the basics of Yoga philosophy.

Repeat for Credit

Y

Typically Offered

Fall or Spring

DANCE 120 - Contemporary Dance I

Credits 2-3

Introduction to principles of contemporary dance. Emphasis on correct body alignment, movement efficiency,

and creative potential of the individual.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 165 - Ballet I

Credits 2-3

Introduction to basics of classical ballet training includes terminology, body positions, movement vocabulary, and principles of body alignment.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 171 - Jazz Dance I

Credits 2-3

A basic course in jazz technique and style, focusing on isolations, rhythmic articulation, and the control and release of energy.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 181 - Tap I

Credits 2-3

Designed for beginning dancers, this course develops skills, knowledge, vocabulary, and appreciation of tap dance as an art form through the presentation of fundamental tap techniques.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 200 - Anatomy for Dancers**Credits 1**

Analysis of human skeletal structure. Application and implication for performance, teaching, and injury prevention.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

DANCE 205 - Dance as an Art Form**Credits 3**

Dance in its religious, social, and artistic forms. Film, slides, demonstrations, and lectures will trace the function of dance in society, the influence of society on dance, how dance relates to other art forms, and current trends in the dance world.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

DANCE 215 - Improvisational Structures**Credits 2-3**

Exploration of personal creative sources for spontaneous

movement through improvisational structures. Emphasis on solo and group problem-solving in creating a performance work.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

DANCE 220 - Principles of Dance Technology**Credits 1-3**

Examination and application of computer, audio, and video technology to dance. Includes instruction and use in performance, choreography, education and research.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 225 - Rhythmic Notation for Dance**Credits 1**

Introduction to basic elements of meter, tempo, rhythm, and notation. Application and practice to dance pedagogy, performance, and choreography.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

DANCE 240 - West African Styles of Social Dance and Music**Credits 2**

Explores several styles of dancing and drumming from

West Africa. Instruction includes technique in the traditional social dances, drumming/musical skills, and songs for the social dances. History, traditions, and social context of the dances.

Note

No prior experience is necessary. All musical instruments are supplied for class.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

DANCE 250 - Performance Styles

Credits 1

Study and practice of technique and performance of specific period/historical, character, or ethnic/specialty dance styles.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

DANCE 265 - Pointe Techniques

Credits 1

Covers classical ballet pointe technique. Focuses on the development of both technique and artistic expression.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DANCE 280 - Musical Theatre Dance

Credits 2-3

History, technique and performance of musical theatre

dance. Rehearsal and performance of selected examples of Broadway choreography.

Repeat for Credit

N

Requisites

Prerequisite: DANCE 120, DANCE 165, or DANCE 171 or permission of instructor.

Typically Offered

Spring-Odd Years

K-State 8

Aesthetic Interpretation

DANCE 323 - Contemporary Dance II

Credits 2

Contemporary Dance II

Repeat for Credit

Y

Requisites

Prerequisite: DANCE 120 and/or consent of instructor.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

DANCE 324 - Contemporary Dance III

Credits 2

Contemporary Dance III

Repeat for Credit

Y

Requisites

Prerequisite: DANCE 323 and/or consent of instructor.

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

DANCE 325 - Ballet II

Credits 2

Ballet II

Repeat for Credit

Y

Requisites

Prerequisite: DANCE 165 or consent of instructor.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 326 - Ballet III**Credits 2**

Ballet III

Repeat for Credit

Y

Requisites

Prerequisite: DANCE 325 or consent of instructor.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 371 - Jazz Dance II**Credits 2**

Intermediate course in jazz technique and style focusing on development of isolations, rhythmic articulation, and the control and release of energy.

Repeat for Credit

Y

Requisites

Prerequisite: DANCE 171.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

DANCE 372 - Jazz Dance III**Credits 2**

Advanced course in jazz technique and style focusing on development of isolations, rhythmic articulation, and the control and release of energy.

Repeat for Credit

Y

Requisites

Prerequisite: DANCE 371 or consent of instructor.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

DANCE 381 - Tap II**Credits 2**

Designed as an intermediate dance class that targets the development of skills, knowledge, and appreciation of tap dance through the presentation of fundamental techniques and other movement experiences. Topics include: concert, rhythm, and fundamental tap dance.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 382 - Tap III**Credits 2**

Designed as an advanced dance class that targets the development of skills, knowledge, and appreciation of tap dance through the presentation of techniques and other movement experiences. Topics include: Broadway and concert dance, rhythm, and Funk Tap dance.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 395 - Dance Composition I

Credits 3

Introduction to the principles of the choreographic craft.
Practical experience in development of movement phrases.
Culminating presentation and critique of work.

Repeat for Credit

N

Requisites

Prerequisite: DANCE 215.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

DANCE 399 - Honors Seminar

Credits 3

Open only to qualified students in the arts and sciences honors program.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

DANCE 459 - Dance History I

Credits 3

Covers dance, particularly ballet and modern dance, from beginnings until the turn of 20th century.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 460 - Dance History II

Credits 3

History of Dance from the 20th Century until the present.

Repeat for Credit

N

Requisites

Prerequisite: DANCE 459.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

DANCE 495 - Dance Composition II

Credits 3

Advanced training and directed experiences in dance composition. Development of theme, phrasing, and style with particular emphasis on group forms.

Repeat for Credit

N

Requisites

Prerequisite: DANCE 395.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

DANCE 498 - Honors Tutorial in Dance

Credits 1-3

Individually directed research/creative endeavor in dance, normally as a preliminary to writing a senior honors thesis.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing, membership in the honors program of the College of Arts and Sciences, and permission of instructor.

Typically Offered

On sufficient demand

DANCE 499 - Honors Project

Credits 3

Open only to Arts and Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

DANCE 502 - Performance Production

Credits 0-1

Studies in the techniques of dance production and performance. Emphasis is on practical application.

Note

Course may be taken for 0, .5, or 1 credit.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

DANCE 503 - K-State Tap Dance Ensemble

Credits 0-1

A performing ensemble that dances for the K-State and Manhattan communities.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DANCE 504 - Contemporary Dance Ensemble

Credits 0-1

A contemporary dance repertory and performing ensemble.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DANCE 505 - Methods and Materials of Teaching Dance

Credits 2

An in-depth survey of the development of dance education and a practical examination of dance for its educative, artistic, disciplinary, and therapeutic values. Emphasis on role of dance education, pedagogy, and advocacy.

Note

Instructor permission required to enroll.

Repeat for Credit

N

Typically Offered

Other

DANCE 506 - Dance Education Fieldwork

Credits 1

A semester of supervised fieldwork incorporating dance as an educative tool in the classroom, in a therapeutic setting, or in an advocacy position. Application of dance education theory under faculty supervision and conference.

Repeat for Credit

N

Requisites

Prerequisite: DANCE 505.

Typically Offered

On sufficient demand

DANCE 507 - K-State African Dance and Music Ensemble

Credits 0-1

A performing group that is open to all students and does not require an audition.

Repeat for Credit
Y

Typically Offered
Fall, Spring

DANCE 509 - CAPSTONE SEMINAR

Credits 1

Introduction to the dance capstone project fields: choreographic, pedagogical, or research. The course orients students to research methodologies, IRB, and dance production requirements, while providing structured support during the proposal writing and submission process.

Repeat for Credit
N

Requisites
Prerequisite: DANCE 395, DANCE 505, or DANCE 605
or Corequisite: DANCE 395, DANCE 505, or DANCE 605

Typically Offered
Fall

DANCE 510 - CAPSTONE PROJECT

Credits 2

Student develops and presents culminating interdisciplinary research, choreographic, or pedagogical project.

Repeat for Credit
N

Requisites
Prerequisite: Student is completing secondary major in Dance and the Human Experience.
Pre-Requisite OR Co-Requisite DANCE 509

Typically Offered
Fall, Spring

DANCE 599 - Independent Studies in Dance

Credits 1-3

Selected topics in dance.

Note
Maximum of 3 hours applicable toward degree. Consent of department head.

Repeat for Credit
Y

Typically Offered
Other

DANCE 605 - Movement: Fundamentals, Analysis, and Observation

Credits 3

Study, application, observation, and analysis of somatic movement fundamentals and their use in performance, education, and therapeutic practices.

Repeat for Credit
N

Requisites
Prerequisite: DANCE 215 or permission of instructor

Typically Offered
Spring

K-State 8
Aesthetic Interpretation

DAS 020 - University Honors Program

Credits 0

All students participating in the University Honors Program and who are enrolled in the College of Arts & Sciences must enroll each semester.

Repeat for Credit
Y

Typically Offered
Fall, Spring

DAS 030 - Introduction to the English Language Program

Credits 0

The purpose for DAS 030 is to provide a monitoring mechanism for English Language Program students. It also allows the ELP, International Programs and International Pre-admissions to track new international students.

Note

This course is for zero credits.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 032 - Training in Organization, Wellness, Academics, Responsibilities and Discipline in the ELP

Credits 1-2

This course is designed to engage English Language Program (ELP) students who are at risk due to repeated non-performance in ELP classes. Explores good study skills, healthy living habits, community involvement, self-discipline, and guided study sessions.

Note

One credit required for students after one semester of non-performance, two credits required for continued enrollment for those with repeated non-performance over consecutive semesters. Department placement.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

DAS 050 - National Student Exchange

Credits 1-15

Enrollment in this course would be required for students participating in the National Student Exchange program. Enrollment in this course would serve primarily as a placeholder and enable the student to maintain full-time enrollment status at K-State. A grade of I (incomplete) would be posted at the end of each term (semester) of

enrollment. Upon receipt of the transfer transcript from the chosen exchange institution, the DAS 050 course and would be removed from the student's record and would be replaced by a text entry detailing participation in the National Student Exchange program. The actual hours earned would be reflected as transfer credit from the institution attended.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 080 - Ambassador Service and Leadership in the College of Arts and Sciences

Credits 0-1

For students who have been chosen as ambassadors for the College of Arts and Sciences. Students are required to enroll to be ambassadors.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DAS 100 - First Year Seminar in K-State Culture

Credits 3

An overview of the intellectual and cultural life of the university. Students will attend a variety of events as a community and learn to reflect on and evaluate these events through writing, class discussion, and public speaking.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

DAS 101 - Discover, Create, and Thrive: Arts and Sciences Orientation

Credits 1

Orients learners to studies in the College of Arts and Sciences, helps learners to develop skills and strategies indicative of success, map their college plan, and compare interdisciplinary ways of knowing and learning across disciplines.

Repeat for Credit

N

Typically Offered

Fall, Spring

DAS 102 - Practicum in Student Governance**Credits 0-1**

Practicum in Student Governance

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

DAS 115 - Orientation to Health Careers**Credits 1**

Acquaints students whose career goals are in the health professions with the variety of options available and with the corresponding academic requirements. Discussion covers an introduction to the personal responsibilities that health-care workers assume and the impact of social and economic problems on our health-care delivery system. Includes an orientation to general requirements for success as a student at K-State and in professional health related programs.

Repeat for Credit

N

Typically Offered

Fall

DAS 130 - Careers in Science and Engineering**Credits 0-1**

Introduction to career opportunities with emphasis on gaining perspective from practicing professionals from multiple science and engineering disciplines through weekly seminars held throughout the semester.

Note

Two lab hours per week.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

DEN 130

DAS 135 - Special Studies in English**Credits 1-12**

Introduction to basic English syntax, writing, reading, speaking, and listening for native speakers of other languages.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 136 - Beginning English I**Credits 1-18**

Introduction to basic English syntax, writing, reading, speaking, and listening for native speakers of other languages.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 138 - Beginning English II**Credits 1-18**

Introduction to basic English syntax, writing, reading, speaking, and listening for native speakers of other

languages.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 140 - Intermediate English I

Credits 1-18

Intermediate study of basic English sentence structure, writing, reading, speaking and listening for native speakers of other languages.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 148 - Basic English Language Orientation

Credits 1

Emphasizes the basic cultural and academic understanding necessary for new international students to be successful in ELP and university classes at K-State. Introduction to cultural differences, campus resources, health and safety, study skills, housing issues, plagiarism, basic immigration rules, classroom expectations.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring

DAS 150 - Intermediate English II

Credits 1-18

Intermediate study of basic English sentence structure, writing, reading, speaking and listening for native speakers of other languages.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 151 - Advanced English Speaking I for Non-native Speakers of English

Credits 3

Comprehension and appropriate response to non-academic discourse; development of accurate pronunciation, oral grammar, and vocabulary usage. Development of fluency.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 152 - Advanced English Writing I

Credits 6

Review of advanced grammatical structures; practice in writing using academic style, organization and rhetorical conventions; transition to an academic vocabulary in writing; introduction to conventions of research writing and citation.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 153 - Advanced English Reading I for Non-native Speakers of English

Credits 6

Introduction to advanced critical reading skills in at level reading passages; introduction to unsimplified academic readings; development of an academic vocabulary; increase of reading speed to approach that of U.S. undergraduates.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 154 - Advanced English Listening I for Non-native Speakers of English**Credits 3**

Comprehension and note-taking of academic lectures at level; introduction to unsimplified academic lectures; comprehension of non-academic discourse at level; use of notes from lecture for test taking.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 156 - Introduction to American Academic Research Writing for International Students**Credits 1**

Introduction to American conventions of research paper writing with emphasis on American academic standards.

Repeat for Credit

N

Requisites

Prerequisite: Permission by the English Language Program.

Typically Offered

Fall, Spring, Summer

DAS 157 - Introduction to American Academic Presentation for International Students**Credits 1**

Introduction to American rhetorical patterns of academic speaking, focusing specifically on deductive and inductive organization patterns and expectations of American audiences.

Repeat for Credit

N

Requisites

Prerequisite: Permission by the English Language Program.

Typically Offered

Fall, Spring, Summer

DAS 158 - Orientation to the American Higher Education System**Credits 1**

Designed to support English Language Program students as they transition to K-State, the English Language Program (ELP), and the Manhattan community. Introduction to the campus resources available.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

DAS 162 - Advanced English Writing II for Non-native Speakers of English**Credits 6**

Use of advanced grammatical structures and academic

vocabulary in writing; practice in editing and revision with an eye to academic to academic style, organization and rhetorical conventions; use of conventions of research writing and citation.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 163 - Advanced English Reading II for Non-native Speakers of English

Credits 3

Development of advanced critical reading skills with unsimplified academic passages; active usage of an academic vocabulary; increase of reading speed equivalent to that of U.S. undergraduates.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 164 - Advanced English Listening II for Non-native Speakers of English

Credits 3

Comprehension and note-taking of non-simplified academic lectures; comprehension of non-lecture academic discourse; use of notes from lectures and other sources for test taking.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 165 - Advanced English Speaking II for Non-native Speakers of English

Credits 3

Comprehension and appropriate response to non-academic and academic discourse; development of accurate pronunciation, oral grammar, and vocabulary usage. Development of fluency.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

DAS 166 - Advanced English Writing III for Non-native Speakers of English

Credits 3

Mastery of independent editing and revision with an eye to academic style, organization, rhetorical conventions and register; mastery of conventions of research writing and citation.

Repeat for Credit

N

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered
Fall, Spring, Summer

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

DAS 167 - Basic Grammar in Writing

Credits 3

Review of basic English grammar; practice of basic grammar in writing; review of grammar usage in academic writing; practice in proofreading and editing of work.

Repeat for Credit
N

Requisites
Prerequisite: Permission by the English Language Program.

Typically Offered
Fall, Spring

DAS 168 - Technical Communication for International Students

Credits 3

Addresses the needs of non-native English speakers studying in the STEM fields. Introduces technical vocabulary, conventions, forms of documents, and practices of written, oral and online technical communication in the United States. Grammar and pronunciation support provided as needed. Student portfolio will include a resume, project proposal, memos, technical report, poster presentation, and personal website.

Repeat for Credit
N

Requisites
Prerequisite: Placement by the English Language Program.

Typically Offered
Fall, Spring

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

DAS 169 - Digital English for International Students

Credits 2

Instruction in online language and communication for international students in order to develop strategies and skills for working effectively in academic digital interaction and collaboration. Includes study of function and use of different web 2.0 tools. Communication skills for intercultural collaboration, and the English language styles and rhetoric appropriate in specific online settings.

Repeat for Credit
N

Requisites
Corequisite: Advanced English II.

Typically Offered
Fall, Spring

K-State 8
Global Issues and Perspectives

DAS 175 - Business Communications for Non-Native Speakers

Credits 3

This course will introduce non-native English speakers to key U.S. business terminology, norms for written and oral communication, and business culture in the U.S. Students will practice business communication and teamwork skills in a hands-on setting.

Note
Students in this course must be enrolled in a degree program in the College of Business Administration.

They must be non-native English speakers.

Students must have completed or achieved part-time status in the English Language Program.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Human Diversity within the U.S.

DAS 176 - Reading Skills for Non-Native Speakers of English

Credits 3

An advanced course designed to improve reading skills and increase academic vocabulary of non-native speakers of English engaged in academic classes.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DAS 177 - Written Communication for Non-Native Speakers of English

Credits 3

Instruction in academic reading and writing skills in order to develop reading skills, increase reading speed, and improve writing of reports, analyses, and summaries. Includes grammar review, the study of style, and development of an academic vocabulary.

Repeat for Credit

Y

Requisites

Prerequisite: Permission by the English Language Program.

Typically Offered

Fall, Spring, Summer

DAS 178 - Listening Skills

Credits 3

Instruction to improve listening, comprehension, and note-taking skills. Instruction in conversational speaking, with an emphasis on developing oral fluency and the effective use of vocabulary and idioms. Includes pronunciation practice, group work, and short academic presentations.

Repeat for Credit

Y

Requisites

Prerequisite: Permission by the English Language Program.

Typically Offered

Fall, Spring, Summer

DAS 179 - Pronunciation and Speaking Skills for Non-Native Speakers of English

Credits 2-3

Introduction in speaking for non-native speakers of English to improve comprehension of non-simplified conversational English. Practice in asking for clarification, responding appropriately to requests, and encouraging interaction, as well as the pronunciation of troublesome English sounds and intonation patterns. Also brief introduction to American culture, especially the American educational system.

Repeat for Credit

Y

Requisites

Prerequisite: Placement by the English Language Program.

Typically Offered

Fall, Spring

DAS 181 - Advanced Integrated Skills

Credits 3

An advanced, combined-skills course to improve the reading, writing, and speaking skills of non-native speakers of English.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DAS 184 - Practical Training in ESL

Credits 1-2

Introduction to practical classroom skills for the non-education major planning to teach ESL abroad as part of a study abroad or internship abroad experience.

Repeat for Credit

N

Requisites

Prerequisite: Permission by the English Language Program.

Typically Offered

Fall, Spring

DAS 185 - Teaching and Cultural Orientation for International Teaching Assistants

Credits 3

Introduction to American undergraduate education, American culture, and university policies. Discussion of effective teaching techniques, nonverbal language, and coping techniques. Practice focusing on pronunciation, vocabulary, grammar, and interactive speaking skills. Individual tutorials based on video-taped teaching presentations.

Repeat for Credit
Y

Requisites
Prerequisite: Permission by English Language Program.

Typically Offered
Fall, Spring, Summer

K-State 8
Global Issues and Perspectives

DAS 195 - CAT Community Connections

Credits 1-3

Interdisciplinary course that explores the connections among two different fields, courses, or disciplines.

Note
For first-year students enrolled in a specific CAT Community linked to the College of Arts and Sciences.

Repeat for Credit
N

Typically Offered
Fall, Spring

DAS 197 - Introduction to Integrated Health Studies

Credits 1

Acquaints students with the Integrated Health Studies secondary major program themes: social and humanistic dimensions of health, ethics in health sciences, multicultural awareness in health, and scientific and statistical reasoning. Prepares students for integrated learning in the coursework associated with the program to

set the tone for the capstone experience. Thematic learning and exposure to digital literacy are key components.

Repeat for Credit
N

Typically Offered
Fall, Spring

DAS 199 - Independent Reading

Credits 0-3

Independent Reading Program.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

DAS 214 - Introduction to Arts & Sciences Education Theory and Practice

Credits 0-2

Introduces learning theory and teaching practices for arts and sciences learning assistants. Presents theoretical issues such as conceptual development, questioning techniques, and cooperative learning. Students will read research literature on teaching and learning in arts and sciences and engage in classroom discussions. Students are expected to reflect on their own teaching practices throughout the semester as well.

Note
Student must be admitted to the LA Program to enroll. Permission of instructor.

Repeat for Credit
N

Typically Offered
Fall, Spring

DAS 225 - Fundamentals of Global Food Systems Leadership

Credits 3

An interdisciplinary approach to the fundamental roles people, policies, and cultures play in the global food system

enterprise as it relates to sustainable food production, processing, distribution, and availability. Students will explore complexities within self, others, and community related to leadership in the context of a rapidly increasing global population.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

GENAG 225, LEAD 225

K-State 8

Global Issues and Perspectives

DAS 240 - Practicum in Pre-Health

Credits 1

Forty hours spent observing the practice of dentistry, medicine, or optometry. Students are under the supervision and direction of individual dentists, physicians, or optometrists.

Repeat for Credit

Y

Requisites

Prerequisite: Sophomore standing, permission of the health professions advisor.

Typically Offered

Fall, Spring, Summer

DAS 315 - Creating a Competitive Health Professional School Application

Credits 1

For students who are preparing to apply to health professional schools in the coming year. Assist in drafting a personal statement, obtaining letters of recommendation, preparing for the interview process, learning about the Centralized Application Services, as well as other preparation needed for their respective entrance examination. Addresses current trends and topics in health care such as interprofessional education, health care disparities, and cultural competence.

Repeat for Credit

N

Typically Offered

Spring

DAS 325 - Uncertainty in Global Food Systems Leadership

Credits 3

Explore technical and adaptive elements of grand challenges across disciplines. This course addresses the impact of cultural identity, life experience, and world views on leadership relationships as it relates to privilege and inclusion in the context of global food systems. Students will consider elements of community-engaged work.

Repeat for Credit

N

Requisites

Prerequisite: LEAD 225, DAS 225, or GENAG 225.

Typically Offered

Spring

Crosslisted

GENAG 325, LEAD 325

K-State 8

Human Diversity within the U.S.

DAS 333 - Origins

Credits 3

An interdisciplinary general education course examining how scholars in the sciences and humanities approach knowledge about the universe, the planet earth, and life itself. How did the universe begin? How did life begin and how does it evolve? How has the planet changed throughout its history? How were answers to these questions discovered? How do we construct narratives about these events, and how do those texts reveal our assumptions and values?

Repeat for Credit

N

Typically Offered

Other

K-State 8

Natural and Physical Sciences

DAS 350 - Topics in the Humanities (Study Abroad)

Credits 1-18

This is an umbrella course for numerous individual courses offered to students in the humanities in Italy program and other study abroad experiences.

Note

Prerequisite: Permission of the director of the individual study abroad experience.

Repeat for Credit

Y

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

DAS 355 - Introduction to Nonviolence Studies

Credits 3

The theory and practice of nonviolence as a method of social change and as a personal way of life. This class will engage students in the consideration of violence and nonviolence, from dynamics that occur within ourselves to those that affect the future of the Earth and its many life forms. Students will share with each other from their own lived experience and will learn from the writings of people who have practiced nonviolence in their lives and work.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

DAS 388 - Honors Internship

Credits 1-3

A scholarly investigation related to activities in a place of employment or in a volunteer situation.

Note

Written and oral presentations are required. Concurrence of a faculty advisor and approval of the arts and sciences honor program advisory council.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

DAS 400 - Undergraduate Research in Arts and Sciences

Credits 0-3

Independent mentored research project.

Note

Students may but are not required to apply to the Arts & Sciences Undergraduate Research Program and receive an award before enrolling.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment in an Arts & Sciences degree program.

Typically Offered

Fall, Spring, Summer

DAS 401 - Independent Undergraduate Research in Arts and Sciences

Credits 0-3

Independent mentored research project.

Note

Students are required to apply to the Arts & Sciences Undergraduate Research Program and receive an award before enrolling.

Repeat for Credit

Y

Requisites

Prerequisite: (1) Enrollment in an Arts & Sciences degree program (2) Students must apply to the Arts & Sciences Undergraduate Research Program and receive an award before enrolling

Typically Offered

Fall, Spring, Summer

DAS 405 - Topics in Medical Laboratory Science**Credits 3-6**

Basic principles and practices of the medical laboratory, techniques and special projects.

Note

This course is part of the Medical Laboratory Science curriculum and is not available to students outside of the MLS major.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

DAS 420 - Primary Texts Seminar**Credits 3**

Emphasizes intellectual history through the lens of social and political development. Students will learn about the impacts of cultural developments such as the awakening of ancient idealism, Renaissance philosophy and literature, the Scientific Revolution, the Enlightenment, and Postmodern philosophy and art.

Note

This course serves as the capstone class for the Primary Texts Certificate, and students in the program will complete their capstone paper within the context of the class, but the course open to all undergraduate students. This course is cross listed with POLSC 420. Weekly class discussion is required. All reading materials are supplied by the Primary Texts Certificate program.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

POLSC 420

DAS 425 - Global Food Systems Leadership in Action**Credits 3**

In this capstone course, students will conduct a community-engaged global food systems leadership research/service project. Emphasis will be placed on data collection, analysis and dissemination to appropriate audiences. Additional emphases will be on ethical dimensions of leadership and individual exploration of careers and roles within global food systems.

Repeat for Credit

N

Requisites

Prerequisite: LEAD 225, DAS 225, or GENAG 225 and LEAD 325, DAS 325, or GENAG 325

Typically Offered

Fall

Crosslisted

GENAG 425, LEAD 425

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

DAS 450 - Honors Colloquium**Credits 3**

An interdisciplinary colloquium in which topics vary by semester. Consistently incorporates perspectives from more than one discipline and area among the arts, humanities, social sciences, and sciences.

Repeat for Credit

N

Requisites

Prerequisite: Membership in the honors program; one

honors course in addition to introduction to the honors Program in the College of Arts and Sciences.

Typically Offered
Other

DAS 455 - Violence, Nonviolence and Social Change

Credits 3

This course reviews historical and contemporary responses to violence around the world by studying ideas, strategies, organizational approaches, and societal impacts on nonviolence and social change. Emphasis is placed on historical antecedents to recent violence and nonviolence, and on the analysis of up-to-date resources as they relate to social change.

Repeat for Credit
N

Requisites
Prerequisite: DAS 355.

Typically Offered
Fall, Spring, Summer

K-State 8
Ethical Reasoning and Responsibility
K-State 8 Tag 2
Global Issues and Perspectives

DAS 475 - Nonviolence Studies: Women and Peace Movements

Credits 3

Analyzes women and girls as leaders of diverse peace movements in the present and recent past.

Repeat for Credit
N

Requisites
Prerequisite: DAS 355.

Typically Offered
Fall, Spring, Summer

K-State 8
Historical Perspectives

K-State 8 Tag 2
Human Diversity within the U.S.

DAS 496 - Integrated Computer Science Capstone

Credits 1

Capstone project for the Integrated Computer Science Major.

Note
Majors only

Repeat for Credit
N

Requisites
Prerequisite: Instructor permission, senior in Integrated Computer Science

Typically Offered
Fall or Spring

DAS 497 - Integrated Health Studies Capstone

Credits 0-2

Capstone experience for the Integrated Health Studies Secondary Major. Follows the structure of the major, fostering integration of learning through the application of knowledge and skills from different areas. Concludes with individual exploration and guided research in an area of specific interest to the student that integrates or synthesizes different aspects of health studies.

Repeat for Credit
N

Requisites
Prerequisite: Enrollment in Integrated Health Studies Secondary major.

Typically Offered
Fall, Spring, Summer

DAS 498 - Social Sciences Capstone

Credits 1

Individual exploration of the social science major to

synthesize knowledge and skills acquired in social science courses.

Repeat for Credit

N

Requisites

senior standing in social science major

Typically Offered

Fall, Spring

DAS 499 - Physical Sciences Senior Report

Credits 1

Individual exploration of an area of physical sciences culminating in a final formal written report. Capstone course required of physical sciences interdisciplinary major.

Note

Permission of physical sciences advisor.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

DAS 501 - Health Science Clinical Training

Credits 3-12

Clinical training for affiliated partners.

Note

Consent of advisor required.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 506 - Undergraduate Cancer Research

Credits 1

Independent mentored research on a cancer-related research project. Includes three seminars covering an introduction to cancer and cancer research, responsible conduct in research, and keeping laboratory notebooks. Students will present brief oral and/or poster presentations on their research project and its relevance to cancer.

Note

The student must have received a Johnson Cancer Research Center Undergraduate Cancer Research Award (CRA) prior to enrolling for the credit.

Repeat for Credit

Y

Typically Offered

Spring

DAS 507 - Senior Research in Latin American Studies

Credits 3

Independent research project under supervision by director of Latin American Studies.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

DAS 525 - Senior Research in International Studies

Credits 3

A research paper or project on an international topic.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DAS 550 - Advanced Topics in the Humanities (Study Abroad)

Credits 0-18

This is an umbrella course for numerous individual courses offered to students in the Humanities in Italy program and other study abroad experiences.

Note

Permission of the director of the individual study abroad experience.

Repeat for Credit

Y

Typically Offered

Spring

DAS 555 - Themes in Nonviolence Studies

Credits 3

Explores nonviolence from a national and global perspective, with particular emphasis on emergent techniques and themes in nonviolence studies with particular emphasis on conflict resolution, peacekeeping and peacebuilding, and intersections of gender, race, class, ethnicity, and religion.

Repeat for Credit

Y

Requisites

Recommended prerequisite: DAS 355.

Typically Offered

Fall, Spring, Summer

DAS 575 - Peacebuilding

Credits 3

Explores how social problems, violence and war are generated and how people are working to build conditions that produce peace. Students will analyze peacebuilding efforts at home, in communities, in countries, in regions, and in the global social system.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

DAS 582 - Natural Resources Environmental Sciences Project

Credits 3

A comprehensive project in NRES. Requires integration of information and understanding acquired in NRES secondary major courses. Students must prepare and present written and oral reports.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: All writing and oral communications courses required for major. Prerequisite or concurrent enrollment: Fifteen hours of approved courses in NRES secondary major.

Typically Offered

Fall, Spring

Crosslisted

GENAG 582 and DEN 582

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

DAS 590 - Applied Nonviolence

Credits 3

The capstone experience for the Undergraduate Certificate in Nonviolence Studies, includes field placement in a campus or community organization in which student will have a skill-and-research-based experience in nonviolence-related social change project. Projects can be local, regional, national, or international in scope. Concurrently, students will engage in academic readings and class sessions that address feminist and nonviolent approaches to social change, program design, and participatory action research. This course will provide students with professional and academic skills that relate to employment and graduate work in diverse fields.

Repeat for Credit

N

Requisites

Prerequisite: DAS 355.

Typically Offered

Spring-Even Years

Crosslisted

WOMST 590 Women's Studies Practice and Theory

K-State 8

Ethical Reasoning and Responsibility

DED 020 - Honors Program

Credits 0

All students accepted into the College of Education honors program must enroll each semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DED 051 - Study Skills Laboratory

Credits 1-3

Helps the student to learn effective study methods, analyze difficulties in reading and studying, and prepare for and improve performance in examinations.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DED 100 - Pre-Professional Laboratory Experiences

Credits 1

Supervised experiences in education designed to facilitate orientation and investigation of teaching through the teacher aide program.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DED 150 - Topics in Education

Credits 0-12

A study of topics in the field of education.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DED 189 - Introduction to the University Honors Program

Credits 1-3

Overview of the University Honors Program including directions, goals, and student requirements for completion of the program.

Repeat for Credit

N

Typically Offered

Fall, Spring

DED 320 - Honors Seminar

Credits 1

Selected topics in education.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DED 350 - Problems in Education

Credits 0-12

A study of topics in the field of education.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DED 420 - Honors Project

Credits 0-3

Individual projects under the supervision of a professor.

Repeat for Credit

Y

Requisites

Prerequisite: Participation in COE Honors Program.

Typically Offered

Fall, Spring, Summer

DED 895 - Preparing for the Professoriate in Education**Credits 1**

This course targets graduate students who plan to enter the professoriate in education. Examines topics such as the job search, integration into the professoriate, expectations for promotion and tenure, and achievement in academia.

Repeat for Credit

N

Typically Offered

Spring

DEN 015 - Engineering Student Success Seminar**Credits 0**

Supports engineering students in identifying potential barriers to student success and gaining access to related campus resources. Students will participate in interactive small groups and discussions. This course will also assist students in developing effective academic skills including, but not limited to: time management, organization, learning styles, effective communication, academic planning and goal setting.

Note

One hour per week.

Repeat for Credit

Y

Requisites

Prerequisite: General Engineering students only.

Prerequisite and/or co-requisite: Math 100 or Math 150.

Typically Offered

Fall, Spring

DEN 060 - Reinstatement Support**Credits 0**

Students who have been reinstated into the College of Engineering must enroll in this course. This course will provide frequent communication and support in the areas of study skills and time management.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DEN 120 - Multicultural Engineering Enrichment Seminar**Credits 1**

Introduction to the academic and intellectual demands of an engineering curriculum from a multicultural perspective. Develop group cohesiveness and an attitude of mutual support by engaging in collaborative learning. Help students acquire effective study methods, analyze/compare learning/teaching styles, prepare for and improve examination performance, promote optimum utilization of campus resources, develop leadership and communication skills and enhance self-esteem.

Note

Credit may not be applied towards an engineering degree.

Repeat for Credit

Y

Typically Offered

Fall

DEN 130 - Careers in Science and Engineering**Credits 0-1**

Introduction to career opportunities with emphasis on gaining perspective from practicing professionals from multiple science and engineering disciplines through weekly seminars held throughout the semester.

Note

Two lab hours per week.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

DAS 130

DEN 160 - College of Engineering Orientation**Credits 1**

Help incoming K-State students' transition to the college of engineering. Students will be introduced to the requirements and expectations of the college of engineering. They will be exposed to tools to promote student success, professional development, and professionalism. Additionally, students will be introduced to all majors offered at K-State in the college of engineering and will be assisted in evaluating their options in order to select the most compatible major.

Repeat for Credit

N

Requisites

College of Engineering majors only; or instructor permission

Typically Offered

Fall, Spring

DEN 161 - Engineering Problem Solving**Credits 1**

Introduction to application-oriented engineering problem solving skills using fundamental engineering problems specific to each discipline, teamwork, and communication skills.

Note

Two hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Freshmen or Sophomore only. B or better in

MATH 100; OR C or better in MATH 150; OR

Prerequisite or co-requisite: MATH 220.

Typically Offered

Fall, Spring

DEN 189 - Introduction to the University Honors Program**Credits 1**

Overview of the University Honors Program, including directions, goals and student requirements for completion of the program.

Repeat for Credit

N

Typically Offered

Fall, Spring

DEN 220 - Multicultural Engineering Colloquium**Credits 1**

Continuation of DEN 120. Emphasis on career exploration and development, introduction to graduate school options, preparation and responsibility for advising process, tips on breaking the failure cycle, behavior modification strategies, and developing and utilizing leadership skills.

Note

Credit may not be applied towards an engineering degree.

Repeat for Credit

N

Typically Offered

Spring

DEN 301 - Creative Problem Solving in Engineering**Credits 1**

Overview of major topics related to creative thinking, including idea development, overcoming personal and professional obstacles, managing change, effective problem solving, and teamwork productivity.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing or consent of instructor.

Typically Offered

Spring

DEN 325 - Engineering Professionalism and Decision Making

Credits 1

An introduction to the complexities of making decisions as an engineer. Students will explore the relationship between ethics and engineering by applying classical moral theory and decision making concepts to evaluate engineering issues and decisions encountered in academic and professional careers.

Note

One hour lecture and one hour activity a week.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

DEN 398 - Problems in Engineering and Technology

Credits 0-4

A study of problems or topics in a specialized area of engineering or technology.

Note

Approval of department head or dean.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DEN 399 - Honors Colloquium in Engineering

Credits 1

Selected topics of general interest.

Note

Open to students in the engineering honors program for one semester.

Repeat for Credit

N

Typically Offered

Spring

DEN 450 - Impact of Technology on Society

Credits 3

A study of social, economic, and environmental problems as a function of technology. Study of effect of various significant technological developments on present society and parallels with present developments. Study of current problems, detection of causes, and analysis of solutions. Implications for the future; governmental, industrial, and individual responsibility in detection of potential problems and methods of control or solution.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing or above.

Typically Offered

Fall, Spring

DEN 499 - Honors Research in Engineering

Credits 1

Individual research problem selected with approval of faculty advisor. Written report is presented at end of second semester.

Note

Open to seniors in the engineering honors program for two semesters.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DEN 590 - Interdisciplinary Engineering Capstone Design Experience I

Credits 0-4

Provides culminating capstone engineering hands-on experiences for students from different degree programs in the Carl R. Ice College of Engineering, working collectively as interdisciplinary project teams. This class focuses on solving real-world complex engineering problems through the application of engineering design principles, engineering science/analyses, and interdisciplinary collaboration and innovation. Students will work in teams with the facilitation of instructors to design, build, and test engineering devices, prototypes, simulation models, or data/computing-based solutions using a design process with design reviews and presentations.

Note

Credit hours variable depending on department requirements. Instructor permission.

Repeat for Credit

N

Typically Offered

Fall, Spring

DEN 591 - Interdisciplinary Engineering Capstone Design Experience II

Credits 0-4

Continuation of the capstone engineering hands-on experiences for students from different degree programs in the Carl R. Ice College of Engineering, working collectively as interdisciplinary project teams. This class focuses on solving real-world complex engineering problems through the application of engineering design principles, engineering science/analyses, and interdisciplinary collaboration and innovation. Students will work in teams with the facilitation of instructors to design, build, and test engineering devices, prototypes,

simulation models, or data/computing-based solutions using a design process with design reviews and presentations.

Note

Credit hours variable depending on department requirements.

Repeat for Credit

N

Requisites

Prerequisite DEN 590 or instructor permission.

Typically Offered

Fall, Spring

DEN 598 - Topics in Engineering and Technology

Credits 1-3

A study of problems or topics in a specialized area of engineering or technology.

Note

Approval of department head or dean.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DHE 020 - University Honors Program

Credits 0

All students participating in the University Honors Program and who are enrolled in the College of Health and Human Sciences must enroll each semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

DHE 102 - Honors Practicum in Research, Teaching, Administration, or Extension

Credits 0-1

Practicum completed in collaboration with a faculty member that enhances skills in research, teaching, administration, or extension programming.

Repeat for Credit

Y

Requisites

Prerequisite: College of Health and Human Sciences honors program member and consent of honors program coordinator.

Typically Offered

Fall, Spring

DHE 195 - CAT Community Connections**Credits 1-3**

Interdisciplinary course that explores the connections among two different fields, courses, or disciplines. For first-year students enrolled in a specific CAT Community linked to the College of Health and Human Sciences programs.

Repeat for Credit

N

Typically Offered

Fall, Spring

DHE 300 - Conducting Honors Research**Credits 1**

This one credit seminar provides an overview of the process of conducting an honors project, which could be undergraduate research or other scholarly project. The seminar is designed for a sophomore and junior participants in the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring

DHE 399 - Honors Seminar in Human Ecology**Credits 1**

Selected topics in health and human services.

Repeat for Credit

N

Requisites

Prerequisite: For students in honors program only.

Typically Offered

Fall, Spring

DIGME 137 - Fundamentals of Visual Communication**Credits 3**

An examination of the elements of visual design essential to communication with digital technology. Topics include design elements, color theory, graphics creation and optimization, and multimedia. Students receive hands-on experience with the elements and principles of visual literacy and working with 2-D organization.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

DIGME 256 - Digital Literacy**Credits 3**

Effective digital communications using industry standard technologies to create and edit various media including photographs, videos, sound recordings, websites and other forms of print and online media. Students analyze, evaluate and participate in digital culture. Digital publishing topics include media access, censorship, copyright, fair use, mashups and remixes.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

DIGME 366 - Visual Communication Studio

Credits 3-6

Students complete portfolio projects that tie together topics related to visual communications design. Content topics include creating graphics, animations, photographs, videos and other relevant visual elements to be viewed in print and digital formats.

Note

Up to nine hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 333

Typically Offered

Fall

DIGME 376 - Digital Rhetoric

Credits 3

Provides students with the theoretical and applied understanding of how rhetoric works in online environments. Rhetorical strategies employed in media are explored with a close analysis of genre, digital literacy and the basics of design. Topics include new media, genre, digital literacy and rhetoric.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200

Typically Offered

Spring

DIGME 386 - Digital Media Production Studio

Credits 3-6

Students complete portfolio projects that tie together topics related digital media production. Content topics include digital manipulation of media with audio editing, video editing, and photo editing tools and techniques.

Note

Up to nine hours studio per week.

Repeat for Credit

N

Requisites

Prerequisite: CMST 333

Typically Offered

Spring

DIGME 406 - Social Media

Credits 3

An exploration of the social media aspects of producing and consuming digital media content; including blogging, podcasting, and vodcasting. Diversity of the human condition is emphasized. Students will develop and publish an online portfolio of their best digital media work.

Repeat for Credit

N

Requisites

Prerequisite: Experience with PC software.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

DIGME 456 - Digital Media Senior Capstone Project

Credits 3-6

Provides seniors with the capstone experience of developing a professional quality project in digital media. Students work individually or in teams to develop a significant project in their area of interest. Students are expected to apply the production techniques covered in

previous digital media courses, write project documentation, and make verbal presentations. Whenever feasible, real-world projects are solicited from local businesses.

Note

Up to nine hours per studio a week.

Repeat for Credit

N

Requisites

Prerequisite: DIGME 386 and senior standing.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

DMP 313 - Introduction To Epidemiology

Credits 3

This introductory course explores the concepts, methods, and tools of epidemiology; the science of disease occurrence and distribution. Students will learn how epidemiologists or "disease detectives" gather, analyze, and interpret information on the occurrence of infectious, non-infectious, and chronic diseases. Through examples of current and/or controversial health topics, students will develop skills to read, interpret and evaluate health information from published epidemiologic studies.

Repeat for Credit

N

Typically Offered

Fall

DMP 314 - Environmental and Public Health

Credits 3

This introductory course explores environmental health, the branch of public health that focuses on relationships between the environment and human health and well-being including the promotion of safe communities at the local, regional, national, and global level. Students will explore physical, chemical, biological, social, and psychosocial factors in the environment that impact human health and the ways in which societies create environmental health hazards. Environmental health issues in globalization,

industrialization, and environmental justice, in both developed and developing countries will be discussed. Students will understand the

Repeat for Credit

N

Typically Offered

Fall

DMP 610 - Feedlot Health Systems

Credits 2

Health of cattle in a commercial feedyard. Includes health risk assessment, cattle handling, processing, vaccination protocols, identification/treatment of sick cattle, necropsy techniques, using computer data to make management decisions for feeder cattle, other management issues. Discussion of disease syndromes and foreign diseases.

Repeat for Credit

N

Typically Offered

Fall

DMP 611 - Cow-Calf Health Systems

Credits 2

Management of animal well-being and efficient production in a cow-calf system. Includes the areas of health, growth, nutrition, pharmaceutical management, and reproduction.

Repeat for Credit

N

Typically Offered

Fall

DMP 650 - Fundamentals of Public Health and Food Safety

Credits 3

Organization and function of food inspection services; principles of disease transmission; diseases transmitted to humans through the food chain.

Note

Jointly with HRIMD 650.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Fall

DMP 680 - Problems in Pathobiology**Credits 1-5**

Enrollment is by consent of the instructor. The format and credit hrs for the course are determined by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DMP 690 - Essential Practices for BSL-3 Research Settings**Credits 1**

This hands-on laboratory centered course will offer students functional skills training and an in-depth understanding of standard microbiological practices, principles and techniques necessary to safely and successfully conduct research in a Biosafety Level-3 setting.

Repeat for Credit

N

Requisites

Corequisite: DMP 691.

Typically Offered

Fall

DMP 691 - Introduction to High Containment Laboratory Topics and Techniques**Credits 3**

This course examines the rationale behind the skills and techniques taught in DMP 690 Essential Practices for High Containment Research Settings. Students will gain

familiarity with the regulatory and operational requirements of high containment facilities and discuss best practices in the laboratory. Students review and discuss scientific readings, case studies, topics, and laboratory techniques appropriate for laboratory work conducted in BSL-3, Animal BSL-3 (ABSL-3), and Large Animal BSL-3 (BSL-3Ag) facilities. This course is designed to complement DMP 690 Essential Practices for High Containment Research Settings.

Repeat for Credit

N

Typically Offered

Summer

DMP 710 - Introduction to One Health**Credits 2**

One Health encompasses the complex interrelationships among humans, animals, and the environment. This online course provides a broad introduction to One Health, incorporating original videos of leading experts, case studies, and scientific readings. It addresses zoonotic diseases and environmental issues that impact human, animal, and ecosystem health.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in biology

Typically Offered

Fall

DMP 725 - GIS (Geographic Information System) Applications in Animal and Public Health**Credits 2**

Explores the relevance/benefits of applying GIS (Geographic Information System) and the concept of spatial thinking in animal/public health research and practice. Health relevant GIS concepts and terminologies, nature and sources of geospatial data, their manipulation methods in a GIS environment, and spatial analysis techniques will be presented.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 508, GEOG 605 are recommended.

Typically Offered

Fall, Spring

DMP 726 - GIS (Geographic Information System) Applications in Animal and Public Health Lab**Credits 1**

Through hands-on laboratory exercises, different technical methods of applying GIS for health data analysis, spatial analytical methods, model building, cartographic principles and geographic visualization are explored.

Repeat for Credit

N

Requisites

Prerequisite: DMP 725 is required.

Typically Offered

Fall, Spring

DMP 754 - Introduction to Epidemiology**Credits 3**

The purpose of this course is to introduce students to the basic principles and methods of epidemiology in order to recognize and understand how disease affects populations (and the associated implications for individuals). This course will prepare students to use epidemiologic methods to solve current and future challenges to diagnose, treat, prevent, and control disease during their professional training and throughout their career.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

MPH 754

DMP 770 - Emerging Diseases**Credits 3**

An investigation into recently identified emerging diseases, the conditions that enable their emergence, and the human health implications of each disease.

Note

This class is open to all students with some biology background, as well as veterinary students.

Repeat for Credit

N

Requisites

Prerequisite: 3 hours of Biology above a 700 level.

Typically Offered

Summer

DMP 802 - Environmental Health**Credits 3**

This is a three-credit graduate-level course. Students will be exposed to professional practice of environmental sciences, epidemiology, toxicology, occupational health and industrial hygiene, and consumer health and safety. Topics include the methods for defining environmental contamination; identifying contaminants, pathogens and toxins; assessing risks and causality; determining health impact; ameliorating hazards; and protecting the population through waste management, regulatory programs, environmental inspections, food and product safety, and environmental policy. Participation is required.

Repeat for Credit

N

Typically Offered

Spring, Summer

DMP 810 - Cancer Pathogenesis**Credits 2**

This lecture will meet once a week for 2 hours per period. The first hour of each meeting will consist of brief student presentations of research papers illustrating key concepts presented in the previous lecture. The second hour of each meeting will consist of a lecture on the indicated topic.

Repeat for Credit

N

Typically Offered

Fall-Even Years

DMP 813 - Select Agent Studies**Credits 3**

This course provides an in-depth study of select agent regulations and guidance. Specific topics include a historical overview of select agent regulations, program rationales, tier one regulations, personnel suitability assessments, inventory systems and oversight. Additional content will look outside the select agent program and address other regulations and guidelines which impact high-containment research such as Dual-Use regulations and the NIH Guidelines for Recombinant DNA. The course will also introduce students to specific agents covered under the select agent program, and review characteristics and research considerations when working with these agents.

Repeat for Credit

N

Typically Offered

Summer

DMP 814 - Veterinary Bacteriology & Mycology Lecture**Credits 3**

Veterinary Bacteriology and Mycology, is designed to provide graduate students in pathobiology or related field with basic knowledge of bacteria, fungi and the diseases that they cause primarily in animals. The course is also designed to provide latest information of the pathogenic mechanisms, virulence factors, antigenic nature, zoonosis and disease transmission, treatment and prevention.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255.

Typically Offered

Spring

DMP 815 - Multidisciplinary Thought and Presentation**Credits 3**

Training in critical thinking, writing, and speaking for the food, veterinary, plant, health, and related sciences. With emphasis on writing, students prepare technical reports, news releases, abstracts, and commentaries. Students prepare meeting agendas and present seminars. Committed students will emerge with enhanced critical-thinking and written-presentation skills.

Repeat for Credit

N

Typically Offered

Fall, Spring

DMP 816 - Trade and Agricultural Health**Credits 2**

This course considers the multilateral trading system as it relates to food safety, food security, animal health, plant health, and international cooperation. The course content will be of value to students interested in food safety and security, epidemiology, public health, agriculture, food science, security studies, political science, agricultural economics, veterinary medicine, and international relations.

Repeat for Credit

N

Typically Offered

Spring

DMP 817 - Principles of Veterinary Immunology**Credits 3**

Innate and adaptive defense mechanisms in domestic animals. Topics include vaccinology, immunopathology, autoimmunity, immunodeficiency, and immunomodulation.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521 and BIOL 255.

Typically Offered

Spring

DMP 818 - Veterinary Epidemiology

Credits 2

Introduction to the principles and methods of veterinary epidemiology: emphasizing how diseases affect populations (and associated implications for individuals), and application to disease diagnosis, treatment, prevention, and control.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

MPH 708

DMP 820 - Rumen Metabolism**Credits 3**

Metabolism, absorption, digestion, and passage of nutrients in the rumen; factors affecting the environment of the rumen; certain aspects of rumen function and dysfunction; techniques used in rumen research.

Note

Three one-hour lectures a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 218 and BIOCH 521 or BIOCH 755.

Typically Offered

Fall-Odd Years

DMP 821 - Advanced Clinical Pathology Laboratory**Credits 1**

Practical training in advanced techniques of clinical chemistry and hematology used in a large clinical pathology laboratory.

Note

Three hours lab per week.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

DMP 830 - Quantitative Analysis in Veterinary Medicine**Credits 3**

Practical experience managing, describing, and interpreting data from animal health and management systems so that the data can be informative for decision-makers evaluating and implementing health programs, diagnostic strategies, and animal management processes.

Repeat for Credit

N

Typically Offered

Fall

DMP 831 - Veterinary Virology**Credits 3**

Morphology, biology, and classification of viruses and their relation to the causes of disease.

Veterinary Virology is a 3 credit lecture course that is designed for veterinary students in the second year of the professional curriculum. The course provides basic and fundamental knowledge on the classification, pathogenesis, and diagnosis of viral pathogens affecting common veterinary species, including ovine, caprine, feline, canine, equine, bovine, avian, and porcine species. In addition, the course is designed to provide adequate knowledge and training for veterinarians in practice on the prevention and management of these viral diseases.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 817.

Typically Offered

Spring

DMP 832 - General Pathology

Credits 4

Etiology, pathogenesis, lesions, and termination of processes of disease, including inflammation, necrosis, regeneration, oncology, and disturbances of metabolism, circulation, and growth.

Note

Three hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AP 806, AP 816 and AP 810.

Typically Offered

Fall

DMP 834 - Veterinary Parasitology**Credits 4**

Study of the helminth, arthropod, and protozoan parasites of companion and food animals. Emphases are on diagnosis, clinical signs, lesions, treatment, control epidemiology, and public health aspects of parasitic disease.

Repeat for Credit

N

Requisites

Prerequisite: AP 810, AP 804, AP 818 and DMP 817 & DMP 818. Must be 2nd yr student in the Veterinary Curriculum.

Typically Offered

Fall

DMP 840 - Public Health Practice**Credits 3-6**

Supervised field experience in an international, state, local, or district health agency or other appropriate health agency.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment in MPH Program.

Typically Offered

Fall, Spring, Summer

Crosslisted

KIN 840, FDSCI 840, FNDH 840, MPH 840

DMP 841 - Veterinary Public Health**Credits 2**

The linkages between human health and animal health and production. Topics include zoonotic disease, emerging and exotic animal diseases, disaster preparedness, regulatory and community health issues focusing on the role of the veterinarian in all.

Note

Two hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 818.

Typically Offered

Spring

DMP 844 - Global Health Issues**Credits 3**

A review of global health problems and various strategies to manage international health concerns. The class is open to graduate students, including veterinary students, with an interest in public health that have at least 12 hours in biology or related courses.

Repeat for Credit

N

Typically Offered

Fall

DMP 845 - Food Safety Risk Analysis**Credits 3**

Three hours of lectures on interwoven roles of risk assessment, management and communication – defined as risk analysis – will be applied to problems and policy development in food safety. This course will aid students in developing the ability to critically examine food safety risk issues from various stakeholder perspectives, leading to

risk management and communication activities to reduce the impact of foodborne disease.

A significant portion of the course will focus on the importance of thorough research and good communication skills, as well as the suitability of communication efforts. The course will be presented through lectures, case study presentations, and Internet-based support material including text, audio and video through the extensive database maintained by Dr. Douglas Powell of Kansas State University and colleagues (foodsafety.ksu.edu; barfblog.com).

Repeat for Credit
N

Typically Offered
Spring

DMP 846 - Foundations of Biosecurity

Credits 3

The course examines the biosecurity policies and procedures required in high and maximum-containment research facilities. It provides a historical perspective of biosecurity, establishes definitions and explores concepts related to personnel, governmental and contemporary biosecurity topics. Agro-security topics are highlighted providing a perspective on risk and threat assessment to public health and institutional, local, regional, national and global threats.

Repeat for Credit
N

Typically Offered
Summer

DMP 850 - Immunology of Domestic Animals

Credits 3

This course is designed to introduce graduate students to immune responses of domestic animals to pathogens and parasites.

Repeat for Credit
N

Requisites
Prerequisite: BIOL 541.

Typically Offered
Fall

DMP 852 - Vaccinology

Credits 3

Multidisciplinary course on vaccine development (including technology) from conceptualization through development, testing, and utilization. Addresses the principles of pathogenesis of infectious diseases, immune protection, and eliciting protective immunity by vaccination; application of traditional and new technologies to vaccine development; principles of preclinical development, manufacturing, and clinical evaluation; importance of the regulatory process; and utilization of epidemiology to measure vaccine need and effectiveness.

Repeat for Credit
N

Typically Offered
Spring, Summer

Crosslisted
AAI 852

DMP 854 - Intermediate Epidemiology

Credits 3

Epidemiologic principles of disease with a focus on measures of disease occurrence, association and impact, determinants of disease diagnostic test evaluation, study design and critical literature evaluation.

Repeat for Credit
N

Requisites
Prerequisite: DMP 708 or DMP 754 or equivalent AND STAT 701 or STAT 703 or DMP 830 or equivalent.

Typically Offered
Spring

Crosslisted
MPH 854

DMP 855 - Disease Detection, Surveillance and Risk Assessment

Credits 3

The course is focused on understanding the principles underlying quantitative risk assessments and disease detection/surveillance systems suited to a variety of animal health and food safety applications. These will then be used to advance the practical application of risk assessment and disease detection in the development of valid and useful herd, regional and national disease surveillance programs.

Repeat for Credit

N

Typically Offered

Fall

DMP 856 - Advanced Veterinary Parasitology**Credits 3**

Structure, life cycle, pathology, immunology, public health significance, diagnosis, and treatment of protozoan and metazoan parasites of veterinary significance.

Note

One hour lecture, one hour recitation, and four hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 718

Typically Offered

Spring-Odd Years

DMP 857 - Systemic Pathology**Credits 5**

Pathology of the organ systems of domestic animals including gross and microscopic study of lesions.

Note

Three hours lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 832.

Typically Offered

Spring

DMP 858 - Introduction to Infectious Disease Modeling for Animal Health**Credits 3**

This is a graduate-level course focused on understanding and implementing infectious disease models using Excel and Monte-Carlo Statistical Methods as well as Spatially Explicit Stochastic models. The course is focused on food animal diseases using a mixture of lecture, scientific literature evaluation, discussion and hands on computer lab exercises.

Repeat for Credit

N

Requisites

Prerequisite: DMP 854 Intermediate Epidemiology.

Typically Offered

Other

DMP 859 - Surgical Pathology**Credits 1-2**

Practical experience in examining and processing surgical biopsy specimens and writing histopathological reports.

Note

Three or six hours lab per week.

Repeat for Credit

Y

Requisites

Prerequisite: DMP 852.

Typically Offered

Fall, Spring, Summer

DMP 860 - Bacterial Pathogenesis and Host Response**Credits 3**

Virulence factors of infectious microorganisms and the host response to infection. Topics include pathogenesis of human and animal diseases and mechanisms of immunity.

Repeat for Credit

N

Requisites

Prerequisite: DMP 812

Typically Offered

Fall-Even Years

DMP 861 - Advanced Diagnostic Pathology**Credits 3**

Pathologic alterations of disease with emphasis on diagnostic characteristics.

Note

Nine hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 852.

Typically Offered

Fall, Summer

DMP 862 - Applied Domestic Animal Immunology**Credits 2**

Real-life immune problems of veterinary and zoonotic relevance and their application to domestic animal immune systems.

Note

One 1-hour lecture and one 1-hour discussion per week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 850, DMP 705 or an immunology course in a veterinary curriculum.

Corequisite: Interested students who might not meet the enrollment prerequisite can contact the course coordinator to request permission to enroll.

Typically Offered

Other

DMP 863 - Advanced Principles of Pathology**Credits 3**

Disease and its effects with emphasis on etiology and pathogenesis; morphologic change will be correlated with changes in chemical composition and function.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: DMP 720.

Typically Offered

Fall

DMP 867 - Advanced Topics in Comparative Pathology**Credits 1-3**

Selected topics to assist pathology majors in their area of specialization.

Repeat for Credit

Y

Requisites

Prerequisite: DMP 852 and DMP 863.

Typically Offered

Fall, Spring, Summer

DMP 870 - Pathobiology Seminar (MS)**Credits 1**

Oral presentations on topics in epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, and toxicology. Reports will include critical review of the relevant literature; experimental design and methodology; and presentation and critical evaluation of data. The course is for MS students.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DMP 871 - Molecular Diagnostics of Infectious Diseases

Credits 3

This graduate course is aimed at reviewing, and evaluating new and improved molecular diagnostic methods for infectious diseases. Theory, development, and applications of molecular diagnostic tests will be discussed in the context of current literature. This course will provide an opportunity for students to learn and apply recent advances in the development of molecular diagnostic test.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521

Students without the prerequisites must have the permission of the course coordinator.

Typically Offered

Fall-Odd Years

DMP 878 - Applications of Flow Cytometry

Credits 1-3

Theory and practical experience in the use of flow cytometry in diagnosis and research.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

DMP 880 - Problems in Pathobiology (MS)

Credits 1-6

A special problems course for graduate students working toward the MS degree in Pathobiology. The course is generally problems- or techniques-based in any of the disciplines in the Pathobiology program, conducted under

the supervision of a graduate faculty in the Pathobiology Graduate Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DMP 888 - Globalization, Cooperation, & the Food Trade

Credits 1

This course will focus on issues and topics including, but not limited to, disputes in the international agricultural and food trade, new concepts such as Food and Agriculture Security, and the food-related challenges faced by wealthy as well as economically poor societies. The course will also address such important topics as the roles played by innovation and investment in the agricultural and food system, the importance of cross-border cooperation in regulation and trade, and the accomplishments of public health and trade policy thought leaders across history.

Repeat for Credit

N

Typically Offered

Fall, Spring

DMP 893 - Principles of Biosafety and Biocontainment

Credits 2

This course will introduce participants to the advanced and administrative principles of biosafety and biocontainment. The course targets future P.I.'s, lab managers, and individuals with previous high-containment research experience. Specific topics include laboratory biosafety levels, special considerations for agriculture and animal labs, facility and building design, regulations, biosafety practices and procedures, and risk assessment processes required in high and maximum containment research facilities.

Repeat for Credit

N

Requisites

Prerequisite: DMP 690 and DMP 691 or instructor permission.

Typically Offered

Summer

DMP 895 - Topics in Pathobiology (MS)

Credits 0-18

A special course for graduate students working toward the MS degree. Lectures, readings, and discussion of topics of current interest in any of the disciplines of Pathobiology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DMP 898 - MS Report in Pathobiology

Credits 2

A written report of either laboratory-based research, field-based research, or a review paper on a topic in the major field.

Repeat for Credit

N

Requisites

Prerequisite: Consent of the major professor

Typically Offered

Fall, Spring, Summer

DMP 899 - MS Research in Pathobiology

Credits 0-18

For graduate students working towards the MS degree. Individual research in the fields of epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, and toxicology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DMP 910 - Pathogenic Mechanisms of Viruses

Credits 3

The goals of the course are to learn various pathogenic mechanisms (virus-host interactions) of selected virus (RNA and DNA) and Prion diseases. The course will cover the molecular, cellular and immunological bases of pathogenesis both in vitro and in animal models.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 730 and BIOL 670.

Typically Offered

Spring-Even Years

DMP 925 - Rumen Microbiology

Credits 3

Lecture dealing with the microorganisms of the rumen, their habitat, diversity, structure, interactions, and biochemical activities. Techniques for enumeration, isolation and identification of ruminal microorganisms.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255.

Typically Offered

Fall-Even Years

DMP 954 - Advanced Epidemiology

Credits 4

Advanced theory and methods for designing, analyzing and interpreting epidemiologic research. Emphasis on observational study design and analysis issues including design identification and optimization, bias recognition and control, and appropriate analytical approaches for epidemiologic data.

Repeat for Credit

N

Requisites

Prerequisite: DMP 854 and STAT 717, or equivalent training (recommended).

Typically Offered
Fall

DMP 963 - Advanced Molecular Biology of Foodborne Pathogens

Credits 2

This lecture will meet once a week for 2 hours per period. The first hour of each meeting will consist of brief student presentations of research papers illustrating key concepts presented in the previous lecture. The second hour of each meeting will consist of a lecture on the indicated topic.

Repeat for Credit
N

Typically Offered
Fall-Odd Years

DMP 965 - Cellular and Molecular Pathology

Credits 4

Biochemistry of the injured cell, relationship of intracellular parasitism to cellular metabolism, metabolic and genetic basis of inherited disease.

Repeat for Credit
N

Requisites
Prerequisite: BIOCH 755 or BIOL 860.

Typically Offered
Spring

DMP 970 - Pathobiology Seminar (PhD)

Credits 1

Oral presentations on topics in epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, and toxicology. Reports will include critical review of the relevant literature; experimental design and methodology; and presentation and critical evaluation of data. The course is for PhD students.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

DMP 971 - Seminal Papers in Molecular Biology

Credits 1

This discussion course will improve graduate student communication, scientific reasoning, and data analysis skills. Students will gain familiarity with the seminal papers of molecular biology that resolved key issues of the central dogma. Key breakthroughs in molecular evolution, microbial genetics, and biotechnology will be discussed.

Repeat for Credit
N

Requisites
Prerequisite: BIO 670, DMP 712, or DMP 860. Should be registered as an M.S. or Ph.D. student in Veterinary Medicine, biochemistry or biology.

Typically Offered
Summer

DMP 980 - Problems in Pathobiology (PhD)

Credits 1-6

A special problems course for graduate students working toward a PhD degree in Pathobiology. The course is generally problems- or techniques-based in any of the disciplines in the program, conducted under the supervision of a graduate faculty in the Pathobiology Graduate Program.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

DMP 995 - Topics in Pathobiology (PhD)

Credits 0-18

A special course for graduate students working toward the PhD degree. Lectures, readings, and discussion of topics of current interest in any of the disciplines of Pathobiology

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

DMP 999 - PhD Research in Pathobiology**Credits 1-18**

For graduate students working towards the PhD degree in pathobiology. Individual research in the fields of epidemiology, food safety, immunology, microbiology, molecular biology, parasitology, pathology, and toxicology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECE 210 - Introduction to Electrical Engineering**Credits 3**

Basic circuit theory including voltage, current, Kirchoff's laws, and Ohm's law. Introduction to circuit elements, application circuits, complex impedance and power, and additional theory fundamental and the EE curriculum. Includes laboratory work (e.g., with multimeters and oscilloscopes) and circuit construction techniques.

Note

Two hours lecture and 2 hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: MATH 220.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

ECE 241 - Introduction to Electrical and Computer Engineering**Credits 3**

An introduction to embedded systems and DC circuitry. Embedded systems focusing on the C programming language, number systems, and data/logical operations. DC circuitry focused on basic circuit theory including voltage, current, ohm's law, and basic circuit components. Includes laboratory work (e.g., with multimeters and oscilloscopes) and circuit prototyping.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ECE 410 - Circuit Theory I**Credits 4**

An introduction to linear circuit theory; analysis of linear circuits containing resistance, inductance, and capacitance. Mutual inductance and transformers.

Note

Three hours lecture and two hour of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221

Typically Offered

Fall, Spring

ECE 431 - Microcontrollers**Credits 3**

Architecture, assembly language programming, serial and parallel input/output, interface circuits, and applications.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 241; and CIS 200 or CIS 209.

Typically Offered

Fall, Spring

ECE 441 - Design of Digital Systems

Credits 3

Design of combinational and sequential systems including asynchronous circuits; testing of digital systems. Emphasis is placed on hardware description languages, computer-aided design tools, and simulations.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 241

Typically Offered

Fall, Spring

ECE 497 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ECE 499 - Honors Research in Electrical and Computer Engineering

Credits 1-18

Individual research problem selected with approval of faculty advisor. Open to students in the College of

Engineering honors program. A report is presented orally and in writing during the last semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ECE 502 - Electronics Laboratory

Credits 2

Design, simulation, construction and testing of electronic circuits.

Note

One hour lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 511 and ECE 526.

Typically Offered

Fall, Spring

ECE 511 - Circuit Theory II

Credits 4

Time-domain transient response of second-order circuits. Circuit analysis using Laplace transforms. Frequency response, filters, transfer functions, two-port networks, and convolution.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and ECE 410.

Typically Offered

Fall, Spring

ECE 512 - Linear Systems

Credits 3

Time- and frequency-domain analysis of signals and systems. Concepts include signal classification, convolution, Fourier series, Fourier transforms, filters, signal sampling, and discrete transforms.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 410 or ECE 519, MATH340, and ECE 540.

Typically Offered

Fall, Spring

ECE 519 - Electric Circuits for Engineers

Credits 3

Principles of direct-current circuits, alternating-current circuits, analog and digital electronics.

Note

Three hours lecture a week. Not open to EE/CMPEN students.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214.

Typically Offered

Fall, Spring, Summer

ECE 525 - Electronics I

Credits 3

Fundamentals of electronic components (e.g. diodes, MOSFETs, BJTs, op amps) and electronic circuits.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 410 or ECE 519.

Typically Offered

Fall, Spring

ECE 526 - Electronics II

Credits 3

Continuation of Electronics I, with emphasis on performance measures, including frequency response. Additional topics include Miller's theorem, cascoding, and the application of negative feedback.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 511 and ECE 525.

Typically Offered

Fall, Spring

ECE 530 - Control Systems Design

Credits 3

Modeling, analysis, and design of control systems. Topics include feedback control; time response and stability of dynamic systems; introduction to root locus and frequency response design.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and ECE 512.

Typically Offered

Fall, Spring

ECE 540 - Applied Scientific Computing for Engineers

Credits 3

Mathematical and programming techniques for solving various classes of numerical problems. General topics, such as the precision of floating point numbers are also discussed. Statistics, linear algebra and optimization are the primary classes of numerical problems addressed.

Repeat for Credit

N

Requisites

Prerequisite: STAT 510 and CIS 209 or CIS 200.

Typically Offered

Fall, Spring

ECE 542 - Computer Networking

Credits 3

Introduction to application, transport, network and link layer protocols, with emphasis to Internet TCP/IP protocols.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 241, STAT 510

Typically Offered

Fall

ECE 557 - Electromagnetic Theory I

Credits 4

Vector analysis, electrostatics, magnetostatics, Faraday's Law, Maxwell's Equations, transmission line analysis, plane waves, Poynting's theorem, and applications.

Note

Four hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214, ECE 410, and MATH 222.

Typically Offered

Fall, Spring

ECE 571 - Introduction to Biomedical Engineering

Credits 3

Overview of engineering applied to clinical medicine and the life sciences. Topics include sensors and instrumentation to acquire physiologic data, imaging techniques, biomechanics, health care information technology, assistive technology, telemedicine, home care, emergency services, battlefield medicine, and biomedical career opportunities.

Note

Three hour lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 222 and PHYS 214.

Typically Offered

Spring

ECE 581 - Energy Conversion I

Credits 3

Three-phase systems, magnetic circuits, transformers, and DC and AC machines.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 410 or ECE 519.

Typically Offered

Fall, Spring

ECE 590 - Senior Design Experience I

Credits 3

Integrates communications, both verbal and written, with ethics and a collaborative design project to emulate a technical professional environment. Introduces design theory, project management, team dynamics, and socio-economic context to design.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 525 and ECE 540

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

ECE 591 - Senior Design Experience II

Credits 2

Second semester of the senior design experience that implements and demonstrates the project design begun in ECE 590. It includes oral presentations for design reviews and technical documentation such as Project Plan, Concept of Operations, Analyses, Architecture and Requirements, Design Descriptions, and User Manual.

Note

Two hours lecture per week

Repeat for Credit

N

Requisites

Prerequisite: ECE 590.

Typically Offered

Fall, Spring

ECE 624 - Power Electronics

Credits 3

Design and analysis of semiconductor-based circuits such as AC-DC converters (rectifiers), DC-DC converters and DC-AC converters (inverters), and their applications in

adjustable speed motor-drives, power supplies, and renewable energy conversion systems.

Repeat for Credit

N

Requisites

Prerequisite: ECE 511, ECE 525.

Typically Offered

Fall

ECE 628 - Electronic Instrumentation

Credits 3

Applications of electronics in the design of analog and digital systems for the measurement of physical variables and in the transduction of these variables into a useful form for both recording and control.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 502 and ECE 526.

Typically Offered

Fall, Spring

ECE 631 - Microcomputer Systems Design

Credits 3

Design and engineering application of 32-bit microcomputers to instrumentation and control. Investigate the relationship of the C language and assembly language. Timing and other interfacing problems will be covered.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 308 or CIS 209 or ME 400; ECE 431; ECE 525 or ECE 519.

Typically Offered

Spring

ECE 632 - Hardware Security Attack Techniques and Countermeasures

Credits 3

Exploration and approaches to address security vulnerabilities, execute attacks, and implement countermeasures against specific hardware attacks. Topics includes reverse-engineering, counterfeiting/cloning, side-channel attacks, fault injection, and physical tampering (e.g., hardware Trojans, mod-chip).

Repeat for Credit

N

Requisites

Prerequisite: ECE431 and ECE441

Typically Offered

Spring

ECE 633 - Real-Time Embedded Systems

Credits 1

Interconnection of peripherals, such as CAN networks, DA/AD converters, and Timers. Implementation of device drivers on top of micro-kernels. Build a simple real time distributed embedded system.

Note

Two hours lecture, and three hours lab a week. Course meets in one contiguous block of five weeks.

Repeat for Credit

N

Requisites

Prerequisite: CIS 621 and CIS 622.

Typically Offered

Fall

ECE 641 - Advanced Digital Design using Logic Synthesis

Credits 3

Applications of hardware description languages (HDLs) for

the design of complex digital systems. Topics include designing and simulating using HDLs, logic synthesis into FPGAs and ASICs, optimization techniques, timing issues, hardware verification, and design for testability.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 441.

Typically Offered

Spring

ECE 643 - Computer Engineering Design Lab

Credits 3

The Design and construction of simple I/O devices and a microcomputer system using simple to complex programmable devices.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 308 or CIS 209; and ECE 441.

Prerequisite or concurrent enrollment: ECE 649.

Typically Offered

Fall

ECE 645 - Digital Electronics

Credits 3

Design of high-performance digital electronics and systems. Topics include design metrics, device modeling, transmission-line models for wiring, signaling conventions, transmitter and receiver circuits, noise analysis and management, power distribution, timing and synchronization techniques.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 525, and ECE 441.

Typically Offered

Spring

ECE 647 - Digital Signal Processing**Credits 3**

Difference equation characterization of digital signal processing systems, transient and steady-state analysis of digital filters using the Z-transform, spectral analysis of digital signals, and design and implementation of digital filters.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 512

Typically Offered

Fall, Spring

ECE 648 - Multimedia Compression**Credits 3**

Introduction to multimedia creation and representation. Design of multimedia systems, which incorporate audio, image and video. Topics will include the analysis and design of multimedia compression, streaming, delivery, security and authoring. Emphasis will be placed on current multimedia standards and applications.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 512 or MATH 551; CIS 308 or CIS 209.

Typically Offered

Spring

ECE 649 - Computer Design I**Credits 3**

Concepts of computer design. Information representation, instruction sets and addressing modes. Arithmetic and logic unit design for fixed and floating point operations. Hardwired and microprogrammed control design. Concepts of pipelining, CISC and RISC architecture. Memory system design including virtual memory, caches and interleaved memories. I/O design methods, interrupt mechanisms, DMA and system integration.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 441.

Typically Offered

Fall, Spring

ECE 660 - Communication Systems I**Credits 3**

Introduction to the analysis and design of analog and digital communication systems. Topics include analog and digital modulation schemes, digital encoding of messages, mathematical modeling of communications systems, noise in communication links and calculation of performance measures for practical links.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ECE 512.

Typically Offered

Spring

ECE 661 - Communication Systems II**Credits 3**

Error-correction code design and analysis with emphasis on

block and convolutional coding and decoding; Trellis-coded modulation. Modeling of bandlimited systems and pulse-shape design, optimal receiver design for bandlimited systems, linear and nonlinear equalization. Multiple-access techniques, orthogonal frequency-division multiplexing and receiver design for CDMA schemes. Simulation of practical digital transmission systems.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 660.

Typically Offered

Spring

ECE 662 - Design of Communication Circuits

Credits 3

The design of communication circuits and systems operating from baseband to UHF frequencies. Topics include tuned-RF amplifiers, oscillators, mixers, LC and ceramic bandpass filters, and demodulators. Projects involve the design and performance testing of a complete radio receiver.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 502 and ECE 526.

Typically Offered

Fall

ECE 670 - Engineering Applications of Machine Intelligence

Credits 3

Study of machine intelligence and fuzzy logic concepts and applications in engineering problem domains. As a term project, develop a fuzzy expert system for a specific

problem domain that runs on a personal computer and develop the supporting documentation.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CIS 200 or CIS 209, and PHYS 214.

Typically Offered

Spring

ECE 681 - Wind and Solar Engineering

Credits 3

Wind and solar energy resource assessment, operation of renewable-energy systems, photovoltaic and wind-turbine physics, and design of complete systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 525 or ECE 519.

Typically Offered

Fall

ECE 684 - Power Laboratory

Credits 3

Introduction to energy and power converters. Course includes lecture and laboratory experience in aspects of modeling and analysis of electric machines (synchronous and induction machines as well as transformers), power quality (harmonic measurement), control of DC-DC and DC-AC converters, and motor-drive systems.

Repeat for Credit

N

Requisites

Prerequisite: ECE 624 and ECE 581.

Typically Offered
Spring

ECE 685 - Power Systems Design

Credits 3

A comprehensive study of modeling of the electric power system components and computer simulation of interconnected power systems in steady state. Vector-matrix descriptions are emphasized.

Note
Three hours of recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: ECE 581.

Typically Offered
Fall

ECE 686 - Power Systems Protection

Credits 3

Analysis of symmetrical and unsymmetrical faults on power systems using symmetrical components technique. Study of protective relaying for protection of power systems against faults. Vector-matrix descriptions and computer solutions are emphasized.

Note
Three hours of recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: ECE 581.

Typically Offered
Spring

ECE 690 - Problems in Electrical and Computer Engineering

Credits 1-18

Problems in Electrical and Computer Engineering

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ECE 694 - Optoelectronics

Credits 3

Applied geometric and physical optics, optical radiation, and the interaction of light and matter. The theory and application of photodetectors, lasers, and other photoemitters. Introduction to fiber optical waveguides, sensors, and systems.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: ECE 525, ECE 557, and CHE 356.

Typically Offered
Fall

ECE 696 - Integrated Circuit Design

Credits 3

Study of silicon integrated circuits with emphasis on CMOS analog and digital applications. The course covers basic device structure and modeling, circuit analysis, system design, IC design methodology and economics plus IC fabrication processes. Computer-aided tools are used to simulate and layout circuits designed by student groups.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: ECE 241 and ECE 525.

Typically Offered
Fall

ECE 715 - Electroacoustics

Credits 3

Basic principles of sound; modeling of, and analogous circuits for, mechanical and acoustical systems; microphones and loudspeakers; Thiele-Small parameters; the analysis and design of, and measurements on, common loudspeaker systems and crossover networks. Projects involve the design, simulation, construction and performance-testing of a complete loudspeaker-and-enclosure system.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 511.

Typically Offered

Fall

ECE 722 - Audio Engineering**Credits 3**

Solid-state and hollow-state analog electronics applicable to high-fidelity audio. Emphasis is on the analysis, design, and construction of audio amplifiers. Projects include design, implementation, and performance-evaluation of a reference-quality audio power amplifier.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 525. Recommended prerequisite: ECE 526.

Typically Offered

Spring

ECE 724 - Analog Electronics**Credits 3**

Analysis, design, and evaluation of BJT and CMOS operational amplifiers. Core topics include frequency compensation and closed-loop stability, slew-rate

optimization, wide-bandwidth design, low-noise design, and macromodeling for simulation.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 502, ECE 526.

Typically Offered

Spring

ECE 725 - Integrated Circuit Devices and Processes**Credits 3**

Integrated circuit fabrication processes including oxidation, diffusion, ion implantation, lithography, etching, crystal growth, process monitoring, and device characterization. Design of discrete and IC devices through laboratory experiments and computer simulations.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 525 and CHE 356.

Typically Offered

Spring

ECE 728 - Mixed Signal Measurements**Credits 3**

Signal classification, noise and uncertainty, TRMS conversion, quantization and ADCs, repetitive sampling and signal recovery techniques, vector voltmeters, basic network analyzers.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 512 or graduate standing.

Typically Offered

On sufficient demand

ECE 730 - Control Systems Analysis and Design**Credits 3**

Use of classical analysis techniques for control system compensation. State space control theory fundamentals are presented in addition to an introductory treatment of several major systems areas.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 530 or ME 640; ME 730.

Typically Offered

Spring

ECE 731 - Advanced Microcomputer System Design**Credits 3**

Design and engineering applications of 16 and 32 bit microprocessors. Utilization of peripheral and co-processor chips.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 631.

Typically Offered

Spring

ECE 733 - Real-Time Embedded Systems Design**Credits 3**

Design and implementation of a comprehensive team project of a complete embedded real-time system.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: CIS 721.

Typically Offered

Spring

ECE 736 - Discrete-Time and Computer-Control Systems**Credits 3**

Analysis and design of discrete-time, sampled-data, and computer-control systems using discrete-state equations and Z-transforms.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 530 or ME 640.

Typically Offered

Spring

ECE 746 - Fault Diagnosis in Digital Systems**Credits 3**

Hazards, fault detection in combinational circuits, and sequential machines using path sensitizing and fault-matrix methods, state table analysis, etc.; system reliability through logical redundancy.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: ECE 541 or ECE 631.

Typically Offered

Spring-Even Years

ECE 749 - Computer Design II**Credits 3**

Study of alternate computer hardware structures.
Investigation of engineering tradeoffs in implementation of alternative instruction sets and computing structures.
Emphasis will be placed on a quantitative approach to cost/performance evaluations including simulation of hardware structures.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 649.

Typically Offered

Fall

ECE 758 - Electromagnetic Theory II**Credits 3**

Continuation of ECE 557.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 557.

Typically Offered

On sufficient demand

ECE 760 - Wireless Communications**Credits 3**

This course exposes seniors and first year graduate students

to important physical layer concepts in wireless communications. Topics include: cellular architecture, large scale and small scale fading channel models, diversity receivers, DS-CDMA transmitter and receiver design, multi-user detection, multi-carrier CDMA and OFDM performance analysis.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 660.

Typically Offered

Spring

ECE 764 - Antennas and Microwave Circuits**Credits 3**

The design of communication circuits and systems operating at microwave frequencies. Topics include antennas, transmission lines, microstrip matching networks, S-parameters, frequency synthesizers, and downconverter components such as LNAs, mixers, and microstrip bandpass filters. Projects involve design, simulation with electronic design automation tools, and laboratory measurements.

Note

Two hour lecture and three hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 502, ECE 512, ECE 526 and ECE 557.

Typically Offered

Spring

ECE 771 - Control Theory Applied to Bioengineering**Credits 3**

Development of mathematical models used in the study and analysis of physiological control systems providing techniques for varying pertinent biological parameters.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: ECE 530 or ME 640, and a basic physiology course.

Typically Offered

Spring

ECE 772 - Theory and Techniques of Bioinstrumentation**Credits 2**

Theoretical aspects of biological signals, electrodes, transducers, digital imaging and computer-based data acquisition directed toward ECE and other science department majors.

Note

Two hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent enrollment in ECE 773 (ECE majors only) and AP 773.

Typically Offered

Fall

ECE 773 - Bioinstrumentation Design Laboratory**Credits 1**

Design and testing of hardware and software for acquiring and analyzing biological signals.

Note

Three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: ECE 502 and concurrent enrollment in ECE 772.

Typically Offered

Fall

ECE 780 - Power Seminar**Credits 1**

Speakers from industry, academia, and government present topics related to power systems engineering.

Note

One hour lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

ECE 824 - Advanced Power Electronics**Credits 3**

High-frequency switching dc/dc converters, resonant converters, analysis and control of power electronic systems, and thermal management.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 624.

Typically Offered

Other

ECE 828 - Topics in Instrumentation**Credits 3**

Selected topics related to the general field of electronic instrumentation.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 628.

Typically Offered

On sufficient demand

ECE 830 - Advanced Systems Theory**Credits 3**

State space description and analysis of continuous and discrete time dynamic systems including optimal control solutions. Both linear and nonlinear systems are considered.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 530 or ME 640.

Typically Offered

Fall

**ECE 832 - Advanced Hardware Security
Attack Techniques and Countermeasures****Credits 3**

Advanced exploration and approaches to address security vulnerabilities, execute attacks, and implement countermeasures against specific hardware attacks. Topics includes reverse-engineering, counterfeiting/cloning, side-channel attacks, fault injection, and physical tampering (e.g., hardware Trojans, mod-chip).

Repeat for Credit

N

Requisites

Prerequisite: ECE431 and ECE441

Typically Offered

Spring

**ECE 840 - Computer Engineering Methods
for Analysis, Simulation, and Design****Credits 3**

Computer-aided and numerical techniques applicable to problems in electrical and computer engineering. Emphasis is on implementation of these techniques on the computer.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 512.

Typically Offered

Spring

ECE 841 - Network Theory**Credits 3**

Introduction to the theoretical tools, methods and algorithms to analyze networks, investigate their structure, and their behavior and properties, as well as several practical applications in computer networks, social networks and power grids.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 410 or STAT 510, high-level programming language.

Typically Offered

Fall

ECE 842 - Parallel Processing**Credits 3**

Parallel processing application in signal and image processing. Array processors, pipeline processors, systolic and wavefront arrays, interconnection networks, performance analysis.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 512, ECE 649.

Typically Offered

Fall-Odd Years

ECE 845 - Sequential Machines**Credits 3**

Theory and mathematical framework of digital hardware will be developed. Limitations and fault detection of these machines will be explored using the theoretical basis of sequential machines.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 510 and ECE 649.

Typically Offered

Spring

ECE 846 - Computer Engineering Methods for Analysis, Simulation, and Design II**Credits 3**

Continuation of ECE 840.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 840.

Typically Offered

Fall

ECE 849 - Topics in Computer Engineering**Credits 3**

Selected topics relating to current developments in computer engineering. Topics may include computer architectures, computer networking, multiprocessing, and

computer interfaces.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 649.

Typically Offered

On sufficient demand

ECE 855 - Advanced Topics in Electromagnetic Theory**Credits 3**

Mathematical development of electromagnetic wave theory.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 758.

Typically Offered

On sufficient demand

ECE 861 - Applied Probability Theory & Random Processes**Credits 3**

Applications of probability theory, random variables and stochastic processes; tools relevant to both modeling uncertainty and inferencing in the presence of uncertainty; probabilistic methods applicable to problems in electrical and computer engineering arena including power systems, communication systems and networks, biomedical systems, etc.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 512.

Typically Offered

Fall

ECE 866 - Transform Processing of Digital Signals**Credits 3**

Orthogonal transforms in digital signal processing with emphasis on one- and two-dimensional signals, generalized Wiener filtering, feature selection in pattern recognition, and elements of adaptive filtering techniques.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 861.

Typically Offered

Spring

ECE 867 - Digital Image Processing**Credits 3**

Basic concepts and techniques of image formation, representation, analysis, restorations, enhancement, coding, segmentation, and description. Object recognition using shape descriptors and syntactic techniques. Image processing applications in remote sensing, computer vision, and medical diagnosis.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 512.

Typically Offered

Fall

ECE 870 - Neural Networks in Engineering**Credits 3**

Engineering applications of artificial neural networks and

machine intelligence. Particular emphasis will be placed on determining appropriate applications of alternate computing approaches and establishing efficient hardware support to implement these computational approaches.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 670.

Typically Offered

Fall-Even Years

ECE 872 - Therapeutic Medical Devices and Systems**Credits 3**

This course will cover: (1) the fundamental principles of electromagnetic energy interactions with biological tissue, and (2) the design and analysis of electromagnetic energy-based therapeutic medical devices and systems. Topics covered include: tissue-energy interactions; neuromuscular electrical stimulation; rationale and applications of thermal therapy; devices for radiofrequency and microwave hyperthermia; thermal ablation; integration with medical imaging systems.

Repeat for Credit

N

Requisites

Prerequisite: an undergraduate course in electromagnetics (e.g. ECE 557); an undergraduate course in numerical methods/scientific computing (e.g. ECE 540)

Typically Offered

Spring

ECE 881 - Advanced Topics in Electric Energy Systems**Credits 3**

Subjects of current interest such as computer methods, distribution and transmission systems, systems planning and economics, extra high voltage transmission, exotic power sources.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 686.

Typically Offered

On sufficient demand

ECE 882 - Power Quality**Credits 3**

Description, analysis, modeling, and solution of difficulties relating to distortion of the waveshape in alternating-current power systems. Problems of voltage regulation. Focus on harmonics, noise, filtering, and communications interference in power systems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 624 and ECE 685.

Typically Offered

Fall, Spring

ECE 885 - Power Systems Operation and Control**Credits 3**

Specific topics include economic dispatch, unit commitment, control of generation, power system security, and state estimation. Several analytical and computational techniques are used to solve different problems related to above mentioned topics.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 685.

Typically Offered

Spring

ECE 887 - Distribution System Engineering**Credits 3**

Analysis, design and planning of electric distribution systems. Standard terminologies related to distribution systems are covered.

Note

Three hours recitation per week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 685.

Typically Offered

Spring

ECE 888 - Power System Stability and Control**Credits 3**

Introduction to power system stability and control. System device modeling and control issues are introduced for the purpose of studying various aspects of power system stability. Transient, small signal, and voltage stability topics are covered. Several stability analysis projects for multimachine systems are included.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 581 and ECE 685.

Typically Offered

Other

ECE 890 - Advanced Electrical Theory**Credits 1-18**

For advanced study in specialized areas by M.S. students.

Repeat for Credit

Y

Requisites

Prerequisite: M.S. student.

Typically Offered

Fall, Spring

ECE 895 - Solid-State Electronic Devices**Credits 3**

Introduction to quantum mechanics, crystal structures, and the semiconductor material properties. Diodes, bipolar transistors, and field-effect transistor structures. Analysis of second-order effects in transistors.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CHE 350, ECE 557, and ECE 696.

Typically Offered

Fall

ECE 896 - Graduate Seminar in Electrical and Computer Engineering**Credits 0**

Presentation and discussion of current advances and research in electrical and computer engineering. Required of all graduate students in electrical and computer engineering.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ECE 897 - Research in Electrical Engineering**Credits 1-18**

Special research problems in electrical engineering.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECE 898 - Master's Report**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECE 899 - Master's Thesis**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECE 931 - Advanced Topics in Control Theory**Credits 3**

Study of advanced topics in optimal, time-varying, and stochastic control theory, or other recent developments in the control systems area.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 830.

Typically Offered

On sufficient demand

ECE 949 - Advanced Topics in Computer Engineering

Credits 3

Selected topics related to advanced computer hardware design, performance measurements, sequential machines, and/ or advanced computer architectures.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 845.

Typically Offered

On sufficient demand

ECE 962 - Advanced Topics in Communications**Credits 3**

Selected topics related to the design and performance analysis of communication systems. Topics may include advanced modulation techniques, optimum receiver design, nonlinear channels, multipath analysis, diversity systems, and others.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 861.

Typically Offered

On sufficient demand

ECE 963 - Detection & Estimation Theory**Credits 3**

Theoretical foundations of detection and estimation theories. Bayesian decision theory with applications to signal detection in discrete time; concept of sufficient statistic and minimum variance unbiased estimation; Bayesian estimation; best linear unbiased estimation; Kalman filtering and its variants; filtering, smoothing and prediction applications across various engineering fields.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 861.

Typically Offered

Spring

ECE 965 - Information Theory**Credits 3**

Information as a measure of uncertainty, zero-memory and Markov sources, coding of information sources, channels and mutual information, reliable transmission via unreliable channels, error correcting codes.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 861.

Typically Offered

Fall

ECE 967 - Advanced Topics in Digital Signal Processing**Credits 3**

Selected topics related to adaptive digital filtering techniques; special purpose hardware for digital filtering; two-dimensional signal processing and classification.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 866 or ECE 968.

Typically Offered

On sufficient demand

ECE 968 - Advanced Digital Filtering

Credits 3

Advanced treatment of the theory of digital filtering and digital signal processing. Emphasis is on analysis of random signals.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 647 and ECE 861.

Typically Offered

Spring

ECE 971 - Advanced Topics in Bioengineering**Credits 3**

Study of complex physiological system simulation and analysis techniques, modern experimental and clinical electronic bioinstrumentation systems. Topics selected according to graduate student's interests.

Repeat for Credit

Y

Requisites

Prerequisite: ECE 771 or ECE 772.

Typically Offered

On sufficient demand

ECE 999 - Dissertation Research**Credits 1-18**

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECED 210 - Introduction to Early Childhood Education**Credits 3**

Examination of the diversity in contemporary early childhood roles and settings, awareness of professional competencies and standards of practice, and recognition of philosophical and historical foundations of the profession.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

ECED 300 - Problems in Early Childhood Education**Credits 1-9**

Independent or small group study of early childhood development and education.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

On sufficient demand

ECED 310 - Early Childhood**Credits 3**

Principles of growth and development of children from conception across the early childhood years, including familial, societal, and other ecological factors affecting young children's development.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 or PSYCH 110.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ECED 311 - Infant Toddler Development and Programs**Credits 3**

Study of infants and toddlers from birth through 36 months including physical, cognitive, language, social, and emotional growth and development. Examination of best practices, responsive caregiving techniques, environments, infant/toddler learning approaches, health, safety, and licensing requirements.

Repeat for Credit

N

Requisites

Prerequisites: ECED 310 Corequisites: ECED 312

Typically Offered

Fall

ECED 312 - Infant Observation Lab**Credits 1**

Observation of the behavior and development of children from infancy through toddlerhood.

Note

Negative TB test, Clearance by KBI and DCF

Repeat for Credit

N

Requisites

Corequisite: ECED 310

Typically Offered

Fall, Spring

ECED 313 - Pre-Professional Experiences in Early Childhood Unified**Credits 1**

Observation and participation in diverse early childhood settings serving children with and without disabilities, aged

birth through kindergarten.

Note

Negative TB test, Clearance by KBI and DCF. Lab requirement

Repeat for Credit

N

Requisites

Corequisite: ECED 310. Restricted to Early Childhood Education and FCSED majors only.

Typically Offered

Fall, Spring

ECED 420 - Interaction Techniques with Young Children**Credits 3**

A developmental approach to the acquisition of interaction techniques conducive to healthy emotional and self-concept growth in the child from birth through kindergarten.

Note

Two hours lecture and one hour lab.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310 and ECED 313. Early Childhood Education majors only or instructor permission.

Typically Offered

Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

ECED 428 - Exceptional Development in Early Childhood**Credits 3**

Exceptional development in early childhood (birth through kindergarten), including developmental delays, physical and sensory impairments, communication disorders, mental retardation, learning and behavioral disorders, and health related concerns: emphasis on IEPs and IFSPs and the family's role in the assessment/referral/intervention process.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310.

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

ECED 450 - Environments in Early Childhood**Credits 3**

Planning, promoting, and maintaining physically and psychologically safe and healthy learning environments for young children. Fostering active, healthy lifestyles and enhanced quality of life for young children through understanding major concepts for nutrition and health education, human movement and physical activity.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

ECED 451 - Administering Early Childhood Programs**Credits 3**

Acquaints students with the multi-faceted dimensions of the director's work and enables them to acquire the knowledge and develop the skills needed to be successful as an administrator of an early childhood program.

Repeat for Credit

N

Requisites

Prerequisites: ECED 310, ECED 313

Typically Offered

Spring

ECED 466 - Language Development**Credits 3**

Survey of the development of speech and language skills in children.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

ECED 524 - Professional Seminar in Early Childhood Education**Credits 3**

Examination of programs for young children, including philosophical and theoretical foundations. Implementation and evaluation of program models and related issues and research.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310 or PSYCH 280.

Typically Offered

Spring

ECED 528 - Research and Inquiry in Early Childhood Education**Credits 3**

Study and application of fundamental concepts, principles, and methods of educational research in early childhood education with focus on preparing students to become reflective practitioners of action research and critical

consumers of research.

Repeat for Credit

N

Requisites

Corequisites: ECED 553 or ECED 554.

Typically Offered

Spring

ECED 530 - Teaching & Learning in Early Childhood Education

Credits 3

Application of developmental and educational theories to teaching and learning in early childhood education programs serving children aged birth through kindergarten, including children with special needs.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310 and ECED 313. Corequisite: ECED 531.

Typically Offered

Fall, Spring

ECED 531 - Developmental Curriculum in Early Childhood Education

Credits 3

The planning and application of developmental curriculum across the content areas to enhance the development and learning of young children.

Repeat for Credit

N

Requisites

Prerequisites: ECED 310 and ECED 313. Corequisite: ECED 530.

Typically Offered

Fall, Spring

ECED 542 - Foundations of Coaching Adults

Credits 3

Introduces coaching in early childhood settings. Special attention is given to adult development and learning theory, mentoring and coaching models, reflective supervision practices, interpersonal skills and the unique needs of early childhood environments.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310

Typically Offered

Spring

ECED 543 - Reflective Practice: Infants and Toddlers

Credits 3

Application of developmental principles and evidence-based practice to the diverse learning environments of infants and toddlers with and without special needs across content areas including the integration of the family and community and public policies that affect programs for young children.

Repeat for Credit

N

Requisites

Prerequisite: ECED 540 and ECED 541

Typically Offered

Fall, Spring

ECED 544 - Reflective Practice: Preschoolers and Kindergartners

Credits 3

Application of developmental principles and evidenced-based practice to the diverse learning environments for preschoolers and kindergartners with and without special needs across content areas including the integration of the family and community and public policies that affect programs for young children.

Repeat for Credit

N

Requisites

Corequisite: ECED 554 and ECED 555 required.
Admission to teacher education required.

Typically Offered

Fall, Spring

ECED 546 - Preschool Lab**Credits 2**

Advanced application of principles and techniques that support the planning, Implementation, and evaluation of early childhood programs for young children.

Note

Negative TB test, Clearance by KBI and DCF

Repeat for Credit

N

Requisites

Prerequisite: ECED 311 and ECED 312 Corequisite: ECED 740

Typically Offered

Spring

ECED 553 - Early Childhood Practicum I: Infants and Toddlers**Credits 1**

Development and implementation of developmentally and functionally appropriate learning experiences, in a variety of formats, addressing content in the areas of early language and literacy, mathematics, science, social studies, the arts, and technology for infants and toddlers. Admission to teacher education required.

Repeat for Credit

N

Requisites

Corequisite: ECED 543.

Typically Offered

Fall

ECED 554 - Early Childhood Practicum II: Preschoolers**Credits 1**

Development and implementation of developmentally and functionally appropriate learning experiences, in a variety of formats, addressing content in the areas of early language and literacy, mathematics, science, social studies, the arts, and technology for the preschool child. Admission to teacher education required.

Repeat for Credit

N

Requisites

Corequisite: ECED 544.

Typically Offered

Fall, Spring

ECED 555 - Early Childhood Practicum III: Kindergartners**Credits 1**

Development and implementation of developmentally and functionally appropriate learning experiences, in a variety of formats, addressing content in the areas of early language and literacy, mathematics, science, social studies, the arts, and technology for the kindergarten child. Admission to teacher education required.

Repeat for Credit

N

Requisites

Corequisite: ECED 544.

Typically Offered

Fall, Spring

ECED 556 - Early Childhood Practicum 4: Home Visiting**Credits 1**

Development and implementation of developmentally and functionally appropriate experiences, within the context of an individualized family plan, addressing development and content in the areas of early language and literacy, mathematics, science, social studies, the arts, and technology for infants and toddlers in home based settings. Admission to teacher education required.

Repeat for Credit

N

Requisites

Prerequisite: ECED 543. Admission to Teacher Education required.

Typically Offered

Spring

ECED 566 - Emergent Literacy**Credits 3**

Exploration of literacy development from birth through kindergarten, including concepts relevant to pre-emergent, emergent, and developing literacy; procedures for designing developmentally and culturally appropriate experiences; factors impacting literacy acquisition and assessment; and intervention procedures for children at-risk for reading and writing problems.

Repeat for Credit

N

Requisites

Prerequisite: ECED 466.

Typically Offered

Spring

ECED 588 - Applied Learning in Early Childhood Programs**Credits 7**

Practical experience working in an early childhood setting with emphasis on program planning and relations with staff and families.

Note

First aid/CPR certification, Negative TB test, Clearance by KBI and DCF

Repeat for Credit

N

Requisites

Prerequisites: ECED 546, Senior standing, and approval of instructor.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

ECED 597 - Home, School, and Community Partnerships**Credits 3**

Strategies to enhance home-school communication with specific focus on families as the primary decision-makers for young children, with or without special needs. Emphasis on the development of family focused and culturally sensitive collaborations involving parents, schools, and the community to support child development, learning, and well-being.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 250 and ECED 428 or permission of instructor.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

ECED 598 - Student Teaching in Early Childhood, Unified**Credits 9**

Design, implementation, assessment of developmentally and individually appropriate evidence-based curriculum for children with and without disabilities birth through kindergarten. Prearrangement and consent of instructor required.

Repeat for Credit

N

Requisites

Prerequisite: ECED 543, ECED 544, ECED 553, ECED 554, ECED 555 and admission to teacher education.

Typically Offered

Fall, Spring

ECED 700 - Problems in Early Childhood Education

Credits 1-6

Independent study of relevant aspects of early childhood development and education.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

On sufficient demand

ECED 704 - Seminar in Early Childhood Education

Credits 1-6

Interpretation and evaluation of information on varied topics relating to early childhood education and development.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

On sufficient demand

ECED 708 - Topics in Early Childhood Education

Credits 1-3

Review of recent research and theory related to early childhood education and development.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

On sufficient demand

ECED 710 - Child Care: Components and Issues

Credits 3

Professional development and leadership; skills, services, and resources supporting quality early childhood care and education.

Repeat for Credit

N

Typically Offered

Summer

ECED 720 - Challenging Behaviors in Early Childhood

Credits 3

The application of developmental principles and evidence-based practices to design and implement a positive learning environment for young children, including children with disabilities. Creating an environment that supports young children's social emotional competence, teaches social skills, and promotes self-regulation is emphasized.

Repeat for Credit

N

Requisites

Prerequisite: ECED 428.

Typically Offered

Fall

ECED 728 - Assessment of Young Children

Credits 3

Theory and practice of individual assessment of handicapped and normal children, infancy to age eight, including cognitive, language, fine and gross motor, social, and self-help skills. Focus on selection, administration, interpretation, and evaluation of screening and comprehensive evaluation instruments for assessment and individual program planning.

Repeat for Credit

N

Requisites

Prerequisite: ECED 310, ECED 428, and ECED 531.

Typically Offered
Fall

ECED 730 - Early Childhood Program Administration

Credits 3

Professional practice and organizational management of early childhood care and education programs; financial and personnel management, program development, and community relations.

Repeat for Credit
N

Requisites
Prerequisite: ECED 450 or consent of instructor.

Typically Offered
Summer

ECED 740 - Play Facilitation

Credits 3

The emphasis of this course is the empirical study and practice of play as an educational, evaluative, and therapeutic intervention with young children.

Repeat for Credit
N

Requisites
Prerequisite: ECED 531 or consent of instructor.

Typically Offered
Spring

ECED 797 - Home Visiting Programs for Young Children and Families

Credits 3

Examination of the empirical literature that supports the provision of early intervention and education services to families with young children through a home visitation model; focus on programs that use home visitation; an understanding of the key principles in early intervention; and the development of skills necessary to implement a coaching model of service delivery to enhance family and

child outcomes.

Repeat for Credit
N

Requisites
Prerequisites: ECED 543.

Typically Offered
Spring

ECED 810 - Child Development

Credits 3

Behavioral characteristics and developmental processes in childhood and adolescence. Analysis of developmental trends and issues in terms of research evidence and theoretical expectations.

Repeat for Credit
N

Typically Offered
Fall-Odd Years

ECED 815 - Infant Behavior and Development

Credits 3

Study of the infant as a developing individual within the family; examination of the theories and research relevant to development from conception through the second year.

Repeat for Credit
N

Typically Offered
Spring-Even Years

ECED 820 - Theories of Human Development

Credits 3

Theories of development relating to physical, social, and psychological patterns of individuals' growth and interaction with the family and the community.

Repeat for Credit
N

Typically Offered
Fall-Even Years

ECED 830 - Advanced Program Development

Credits 3

Analysis of the process and application of child development theory to early childhood program planning.

Repeat for Credit

N

Typically Offered

Fall-Even Years

ECED 883 - Practicum in Early Childhood Education

Credits 1-18

Supervised experience in providing help and/or instruction in the several areas of human development and family studies presented in terms of the special interests of the students. Consent of practicum supervisor is required for each.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECED 884 - Practicum in Parent Education

Credits 1-18

Supervised experience in providing help and/or instruction in the several areas of human development and family studies presented in terms of the special interests of the students. Consent of practicum supervisor is required for each.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECED 894 - Readings in Early Childhood Education

Credits 1-6

Implications of research findings in preparation for

professional work and research in early childhood education.

Repeat for Credit

Y

Requisites

Prerequisite: Twelve hours in social-behavioral science; and consent of instructor.

Typically Offered

Fall, Spring, Summer

ECED 899 - MS Research in Early Childhood Education

Credits 1-6

Individual research problems which may form the basis for the master's thesis or report.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ECET 100 - Basic Electronics

Credits 3

A survey course designed to provide an overview of basic direct and alternating current circuits and an introduction to linear and digital electronics. Laboratory exercises reinforce circuit theory and provide skills in the use of common electronic instruments.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: MATH 100 or consent of instructor.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 101 - Circuits I

Credits 4

An introductory course in basic circuit theory emphasizing the analysis of passive circuit networks containing resistance, capacitance, and inductance operating in direct current conditions. Topics include equivalent circuits, network theorems, capacitance, RC-circuit response, inductance, RL-circuit response, and computer simulation.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ETB 102 or ECET 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 210 - Linear Circuit Applications

Credits 4

Analysis and design of analog circuits including differential amplifiers, oscillators, linear and switching power amplifiers, applications of operational amplifiers, advanced semiconductor devices, and heat sinks.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 110. Corequisite: ECET 201.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 220 - Semiconductor Electronics

Credits 4

An introductory course in electronic devices. Topics include PN-junction theory, diodes, transistors, transistor biasing, transistor modeling, operational amplifiers, voltage regulators, and field-effect transistors (FET). Additional topics include Miller's Theorem and Network Analysis

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100

Corequisite: ECET 101, and MATH 150 or AIT 301

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 250 - Digital Logic

Credits 3

Study of basic logic elements including gates, flip-flops, counters, and registers. Includes Boolean algebra, logic reduction methods, and digital logic applications. Emphasis on computer simulation and PLD implementation of logic circuits.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: ECET 100 or ETB 102.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ECET 299 - Topics in Electronic and Computer Engineering Technology

Credits 1-18

Provides an opportunity for faculty to present electronic and computer engineering technology topics.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

ECET 301 - Circuits II

Credits 4

Analysis of passive networks containing resistance, capacitance, and inductance operating in alternating current conditions. Includes sinusoidal waveforms, polar and rectangular complex algebra, inductive and capacitive reactance, impedance networks, power factor correction, resonance, magnetic circuits, and an introduction to three-phase power distribution. Calculus relationships between linear bilateral electrical components are also discussed.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 101 and MATH 150 or AIT 301

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 304 - Electric Power and Devices

Credits 3

Industrial applications of direct and alternating power, devices, and systems. Topics include electrical and electronic power devices, controllers, servomechanisms, and actuators; DC and AC motors and generators, motor speed control and drive systems; electrical power distribution, and industrial electronics applications.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or ETB 102 or ECET 101 and MATH 150.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 320 - Electronic Communication Systems

Credits 3

A survey of analog and digital communication techniques and systems including modulation, transmission line concepts, radio-wave propagation, antenna theory, and the effects of noise.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 110, ECET 201, and MATH 220 or AIT 301.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 330 - Industrial Controls

Credits 4

A study of electronic circuits and systems encountered in industrial environments. Topics include power control devices and applications, power system design, sensors, transducers, PLCs, computer-based data acquisition, and automatic control concepts.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: ECET 350.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 335 - Industrial Control Topics

Credits 1

Study of the applications of electronic circuits and systems in industrial environments. Topics include control systems and devices, control system modeling and simulation.

Note

Two hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: ECET 100 or AIT 335

Typically Offered

Spring

ECET 340 - Electronic Manufacturing

Credits 3

A practical course in the details of electronic system design and fabrication. Topics include printed-circuit board design, layout, and fabrication; electronic-system design principles; 3D modeling, fabrication, packaging, and assembly techniques for electronic systems; and through-hole and surface-mount technologies.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or AIT 335

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 350 - Microprocessor Fundamentals

Credits 3

Concepts of microprocessor architecture, programming, and interfacing. Topics include assembly and C language programming, data conversion methods, and microprocessor-based system development tools.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or AIT 335

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

ECET 352 - Digital Circuits and Systems

Credits 3

Study of digital circuits and systems, i.e., systems controlled by microprocessors and microcontrollers. Students design and build digital circuits for the solution of engineering problems. Digital circuit design, and interfacing techniques are emphasized.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 350 and CMST 302 or instructor consent.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ECET 354 - Microcontroller Applications**Credits 3**

Examines the hardware and software of microcontroller controlled systems designed for a specific purpose (i.e. embedded systems). Students will learn how to interface microcontrollers to various sensors, actuators and communication devices as well as learn the programming associated with these devices.

Note

Two hours lecture and two hours lab.

Repeat for Credit

N

Requisites

Prerequisite: ECET 350 and CMST 302.

Typically Offered

Fall

ECET 414 - Electromagnetic Applications**Credits 4**

Emphasizes the physical understanding and visualization of Maxwell's Equations leading to the design of linear

bilateral circuit components, waveguides and passive sensors for use in the radio-frequency (RF) regime.

Note

Three hours lecture and two hours lab.

Repeat for Credit

N

Requisites

Prerequisite: ECET 320 and MATH 220.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 420 - Communication Circuits Design**Credits 3**

An introduction to the theory and design of electronic circuits for communications emphasizing the implementation and analysis of common radio-frequency (RF) building blocks. Topics include s-parameters, the Smith chart, component behavior, RF test equipment, computer simulation, filter design, impedance matching, amplifiers, oscillators, mixers, and demodulators.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 320.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 421 - Telecommunication Systems**Credits 4**

An introduction to data communications and a survey of modern communication systems. Topics include Fourier analysis, data encoding, data link control, fiber-optic systems, cellular systems, satellite systems, and the modern telephone system.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 320, CYBR 250, and MATH 221.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ECET 430 - Signals and Systems

Credits 3

A study of various network topics including Laplace transforms, signal flow graph models, transfer functions, network response, and differential equations and linear approximations of physical systems. The theory of control systems and their applications are discussed.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 201.

Corequisite: MATH 220 or AIT 301.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ECET 450 - Digital Systems and Computer Architecture

Credits 4

Development of advanced digital design techniques. Topics include VHDL-based design, simulation, and synthesis; testing and validation; system-level interfacing; and computer architecture.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 350.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ECET 480 - Electronic Design I

Credits 1

Application of electronic principles and the design methodology to solving a significant design problem in a team context. Includes determining customer requirements, exploring and choosing design alternatives, scheduling, and project management. Significant milestones are the project's conceptual, preliminary, and critical design reviews, which require written and oral presentations.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 320 and ECET 352 and ENGL 302.

Corequisite: ECET 430.

Typically Offered

Fall

ECET 481 - Electronic Design II

Credits 2

A continuation of ECET 480. Includes the implementation, testing, and delivery of the project initiated in ECET 480

Electronic Design I. Significant milestones are the project prototype, design report, and final presentation.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 480.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

ECET 499 - Advanced Topics in Electronic and Computer Engineering Technology

Credits 1-18

Provides an opportunity for faculty to present advanced electronic and computer engineering technology topics.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

ECON 101 - Contemporary Economic Issues

Credits 3

An introduction to economic analysis and thinking on current issues that our society as well as other nations face. Using essential tools of economics such as opportunity cost, marginal analysis, and demand and supply, we examine some contemporary issues in an issue-oriented manner, rather than technically oriented. For students who want to familiarize themselves with current national and international economic issues and concerns. Not intended to be taken by economics majors or minors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ECON 110 - Principles of Macroeconomics

Credits 3

Basic facts, principles, and problems of economics; determination of the level of output, employment, and the price level; the monetary and banking system; problems and policies of economic instability, inflation, and growth; principles of economic development; other economics systems.

Repeat for Credit

N

Requisites

Prerequisite: Probability of a grade of C or higher (PROB $\geq$ C) of at least 40 percent according to the economics component if the ACT Student Profile, a score of 18 or higher on the Math placement exam, or a Grade of B or higher in MATH 010.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ECON 111 - Principles of Macroeconomics - Honors

Credits 3

Basic facts, principles, and problems of economics; determination of the level of output, employment, and the price level; the monetary and banking system; problems and policies of economic instability, inflation, and growth; principles of economic development; other economics systems.

Repeat for Credit

N

Requisites

Prerequisite: Participation in honors program and consent of instructor.

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ECON 120 - Principles of Microeconomics**Credits 3**

Basic facts, principles, and problems of economics including study of the determination of prices; the determination of wages, rent, interest, and profit; theory of the firm; monopoly and government regulation; international economic relations.

Repeat for Credit

N

Requisites

Prerequisite: Probability of a grade of C or higher (PROB $\geq$ C) of at least 40 percent according to the economics component of the ACT Student Profile, a score of 18 or higher on the Math Placement Exam, or a grade of B or higher in MATH 010.

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

ECON 399 - Honors Seminar in Economics**Credits 3**

For sophomores in honors program-scheduled irregularly. Readings and discussions.

Note

Open to students in the honors program not majoring in economics.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

ECON 401 - Sophomore/Junior Seminar in Economics**Credits 1**

An introduction to economics as a science and a profession. The course introduces students to the skills and tools that make economics an attractive and enjoyable field as well as an overview of economic data and current debates.

Note

Open only to economics majors and those contemplating an economics major.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110 and ECON 120.

Typically Offered

Other

K-State 8

Social Sciences

ECON 499 - Honors Project**Credits 3**

Open only to Arts and Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

ECON 505 - South Asian Civilizations**Credits 3**

Interdisciplinary survey of the development of civilization in India, Pakistan, Sri Lanka, Bangladesh, and Afghanistan, including geography, history, religion, culture, language, literature, current economy, and significant social

movements.

Note

May not be counted toward economics major or minor.

Repeat for Credit

N

Requisites

Prerequisite: Three hours of social science or junior standing.

Typically Offered

Spring

Crosslisted

ANTH 505, GEOG 505, HIST 505, POLSC 505, SOCIO 505

ECON 507 - The Japanese Economy

Credits 3

Analyzes Japan's growth, productivity change, income distribution, government policies, agriculture, industrial structure, labor relations education and technology, and international trade and finance. Emphases will be on U.S.-Japanese competition and comparisons.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110.

Typically Offered

Fall

ECON 510 - Intermediate Macroeconomics

Credits 3

An examination of the behavior of the economy as a whole, including an analysis of the national income account, consumption, investment, money, interest, the price level, the level of employment, monetary and fiscal policy, and economic growth.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110, and one of the following, ECON

120 or AGECE 120 or AGECE 121.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

ECON 520 - Intermediate Microeconomics

Credits 3

An examination of the theories of consumer behavior and demand, and the theories of production, cost, and supply. The determination of product prices and output in various market structures, and an analysis of factor pricing. Introduction to welfare economics.

Note

Students cannot receive credit for both ECON 520 and ECON 521.

Repeat for Credit

N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Fall, Spring, Summer

ECON 521 - Intermediate Microeconomics Theory

Credits 3

A mathematical approach to intermediate microeconomics. Emphasis is placed on the use of optimization techniques to examine consumer demand, production and cost, behavior of the firm, market structure and welfare.

Note

Students cannot receive credit for both ECON 520 and ECON 521.

Repeat for Credit

N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121; and MATH 205 or MATH 220.

Typically Offered
Fall

ECON 523 - Human Resource Economics

Credits 3

An introduction to the economic forces influencing wage and employment determination, income differentials, unemployment, and the production and acquisition of human capital. Emphasis on public policy, labor unions, and other relevant institutions.

Repeat for Credit
N

Requisites
Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered
Spring

ECON 524 - Sports Economics

Credits 3

An economic analysis of professional and amateur sports. Pay determination of professional athletes, monopsony power of owners, discrimination, the importance of leagues, competitive balance, antitrust issues, collective bargaining, the financing of sports stadiums, and current economic issues in sports.

Repeat for Credit
N

Requisites
Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered
Fall, Spring

ECON 527 - Environmental Economics

Credits 3

Economics of environmental market failure and the efficient use of exhaustible and renewable resources. Topics include the application of markets and government policies to greenhouse warming, air and water pollution, and recycling.

Repeat for Credit
N

Requisites
Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered
Other

ECON 530 - Money and Banking

Credits 3

Nature, principles, and functions of money; development and operation of financial institutions in the American monetary system, with emphasis on processes, problems, and policies of commercial banks in the United States.

Repeat for Credit
N

Requisites
Prerequisite: ECON 110.

Typically Offered
Fall, Spring, Summer

ECON 532 - Fiscal Operation of State and Local Government

Credits 3

Designed for students who plan careers related to state or local government. Selected topics in state and local taxation and expenditure.

Repeat for Credit
N

Requisites
Prerequisite: ECON 110 and permission of instructor.

Typically Offered
Other

ECON 536 - Comparative Economics

Credits 3

The transition by Russia, Ukraine, Eastern and Central Europe, and Central Asia to market economics; economic reform in China, India, and other countries; and Marxian critiques of capitalism.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110 or ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Fall

ECON 540 - Managerial Economics**Credits 3**

Microeconomic topics applicable to understanding and analyzing firm behavior: optimization, demand, estimation, production, and cost theory. Applications to business problems.

Repeat for Credit

N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121; and an introductory-level statistics course (STAT 225, STAT 240, or STAT 250); and MATH 205 or MATH 220.

Typically Offered

Fall, Spring, Summer

ECON 555 - Urban and Regional Economics**Credits 3**

An examination of the determinants of the economic performance of urban and regional economies, including theory, problems, and policy.

Repeat for Credit

N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Fall

ECON 580 - Senior Seminar in Economics**Credits 3**

Topics for class discussion include history of economic

thought, research methods in economics, and current economic issues. Students will prepare and present papers written with faculty guidance. Required of all economics majors.

Repeat for Credit

N

Requisites

Prerequisite: ECON 510; and ECON 520 or ECON 521; and STAT 351, or STAT 511 or STAT 705 or concurrent enrollment in one of the three. ECON majors only.

Typically Offered

Fall, Spring

ECON 590 - Monetary, Credit, and Fiscal Policies**Credits 3**

Advanced study of monetary, credit, and fiscal policies including the goals of aggregative economic policy, conflicts among goals, and measures to resolve conflicts; money markets; targets of central bank control; the relative strength of monetary and fiscal policies; rational expectations; hypothesis and policy ineffectiveness debate; terms structure of interest rates.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

ECON 595 - Problems in Economics**Credits 1-18**

Individual study is offered in international trade, labor relations, money and banking, public finance, transportation, general economics.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

ECON 599 - Topics in Economics

Credits 1-3

Courses on special topics to be taught on demand.

Repeat for Credit
Y

Requisites
Prerequisite: To be set for each topic.

Typically Offered
On sufficient demand

ECON 605 - Economic Applications of Game Theory and Strategic Behavior

Credits 3

Basic principles of game theory including Nash equilibria, repeated games, and strategy with incomplete information. Lecture course.

Repeat for Credit
N

Requisites
Prerequisite: ECON 520 or 521; and MATH 205 or MATH 220.

Typically Offered
Fall, Spring

ECON 608 - Python Coding for Economics

Credits 3

Introduction to quantitative methods in economics. Works with Python programming language and covers topics such as using and coding functions, working with loops, object-oriented programming, understanding and building classes, data visualization, data management, and optimization.

Repeat for Credit
N

Requisites
Prerequisite: ECON 510 or ECON 520, and STAT 225 or

STAT 240 or STAT 250
Recommended Prerequisite: ECON 510 AND ECON 520
or concurrent enrollment

Typically Offered
Spring

ECON 620 - Labor Economics

Credits 3

Economics of the labor market – theory and empirical evidence. Labor force composition and trends, labor supply, labor demand, human capital, wage differentials, migration, trade unions, and current issues.

Repeat for Credit
N

Requisites
Prerequisite: ECON 520 or ECON 521.

Typically Offered
Fall

ECON 627 - Contemporary Labor Problems

Credits 3

Emphasis on current research and public policies dealing with such matters as full employment, poverty, discrimination, social security, unemployment insurance, health care, minimum wages, training, and education.

Repeat for Credit
N

Requisites
Prerequisite: ECON 620 or consent of instructor.

Typically Offered
Other

ECON 630 - Introduction to Econometrics

Credits 3

An introduction to the analytical and quantitative methods used in economics. Applications to specific problems with an emphasis on computer analyses.

Repeat for Credit
N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121; and MATH 205 or MATH 220; and STAT 351 or AGECE 501 or STAT 511 or STAT 705.

Typically Offered

Spring

ECON 631 - Principles of Transportation**Credits 3**

Examines the transportation market from the shippers' point of view by examining the impact of transportation on business firm decisions such as location, markets, and prices. Also covers the costs, prices, and service characteristics of railroads, motor carriers, water carriers, oil pipelines and airlines. The role and impact of government in the transportation market is examined from both a promotion and regulation perspective.

Repeat for Credit

N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Fall, Spring

ECON 633 - Public Finance**Credits 3**

Course seeks answers to questions such as: Which goods should be provided by the private sector and which by the public sector (government)? With what criteria are public expenditures evaluated? What is an equitable and efficient tax system? Who bears the tax burden? What aspects of existing taxes need reform?

Repeat for Credit

N

Requisites

Prerequisite: ECON 110, and ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Spring

ECON 640 - Industrial Organization and Public Policy**Credits 3**

An examination of measures and determinants of industrial concentration, and an analysis of market structure, conduct, and performance, and policies related to performance.

Repeat for Credit

N

Requisites

Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Other

ECON 681 - International Trade**Credits 3**

Principles of international trade, determinants of the value of trade between any pair of countries, sources of gains from trade, main factors determining the pattern of trade, commercial policy, the political economy of trade and strategic trade policy.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110 and one of the following: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered

Fall, Spring

ECON 682 - Development Economics**Credits 3**

Factors affecting the economic modernization of the less-developed countries. Emphasis on capital formation, human capital, investment allocation, technical progress, income distribution, population growth, and the international economics of development.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110.

Typically Offered
Fall

ECON 684 - International Finance and Open Economy Macroeconomics

Credits 3

Introduction to international finance and open-economy macroeconomics, including the foreign exchange market, the balance of payments, international financial markets, and recent and ongoing financial crises. Covers core theoretical material, the course will examine current policy issues.

Repeat for Credit
N

Requisites
Prerequisite: ECON 110; and ECON 120 or AGECE 120 or AGECE 121; and ECON 510.

Typically Offered
Spring

ECON 686 - Economics Forecasting

Credits 3

Focus on forecasting macroeconomic variables such as sales activity, tax revenues and other important variables. Techniques of forecasting using econometrics.

Repeat for Credit
N

Requisites
Prerequisite: ECON 110; and ECON 120 or AGECE 120 or AGECE 121.

Typically Offered
Spring

ECON 688 - Health Economics

Credits 3

This course applies the tools of microeconomics to the health-care sector. It analyzes the behavior of consumers and providers of medical care, the functioning of insurance markets, and the roles of government and the private sector. International comparisons are made.

Repeat for Credit
N

Requisites
Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered
Fall-Odd Years

ECON 695 - Undergraduate Research Methods in Economics

Credits 3

Development of a research proposal and completion of a research project under the guidance of a faculty member. Instruction in research design, methods and data. The independent-work phase of the course will be structured with weekly targets for completing economic theory, data/case study description, methods description and analysis and interpretation.

Repeat for Credit
N

Requisites
Prerequisite: ECON 110; and ECON 120 or AGECE 120 or AGECE 121; and ECON 630. Some prerequisites may be waived with instructor consent.

Typically Offered
Fall

ECON 699 - Seminar in Economics

Credits 1-3

Seminars of special interest will be offered on demand.

Repeat for Credit
Y

Requisites
Prerequisite: ECON 120 or AGECE 120 or AGECE 121.

Typically Offered
On sufficient demand

ECON 710 - History of Economic Thought

Credits 3

Development of economic ideas and doctrines and the relation of these to conditions existing when they were formulated.

Repeat for Credit

N

Requisites

Prerequisite: ECON 510.

Typically Offered

Other

ECON 720 - Microeconomic Theory

Credits 3

Demand, cost, and production theories; price and output determination in different market structures; the theory of factor market pricing; an introduction to general equilibrium and welfare analysis.

Repeat for Credit

N

Requisites

Prerequisite: ECON 520 or ECON 521; and MATH 205 or MATH 220.

Typically Offered

Fall

ECON 730 - Applied Econometrics

Credits 3

Emphasis on applied econometrics methods. Topics include simple and multiple linear regression as well as other econometric models used in economics. Diagnosis and remedies of potential problems with linear models and data, leading to quantitative answers to empirical questions.

Repeat for Credit

N

Requisites

Prerequisite: ECON 630.

Typically Offered

Spring

ECON 735 - Mathematical Economics

Credits 3

Application of mathematical tools of concrete problems in micro- and macro-economics; mathematical treatment of models of consumption, production, market equilibrium, and aggregate growth.

Repeat for Credit

N

Requisites

Prerequisite: ECON 520; and MATH 205 or MATH 220.

Typically Offered

Fall

ECON 801 - Topics in Monetary Theory

Credits 3

Emphasis on recent literature of monetary economics; Federal Reserve control of the money stock; the demand for money; money and economic activity; monetary targets and indicators.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 510 and ECON 530.

Typically Offered

Other

ECON 805 - Macroeconomic Theory I

Credits 3

An overview of macroeconomic theory including Classical, Keynesian, and Monetarist theory. An Introduction to modern analysis in macroeconomics with an emphasis on dynamic methods and general equilibrium analysis.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 120 and ECON 510.

Typically Offered

Spring

ECON 815 - Economic Analysis for Business

Credits 3

Microeconomic and macroeconomic theory with selected business applications. Theory of consumer and producer behavior and price determination in individual markets. Theory of aggregate economic behavior and the effects of fiscal and monetary policies.

Note

Not available for graduate credit in economics.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 110, ECON 120, and one semester of calculus (MATH 205 or MATH 220).

Typically Offered

Spring

ECON 823 - Advanced International Economics**Credits 3**

Theoretical and policy issues related to the international monetary system, capital movements, exchange rate systems, the U.S. balance of payments, and trade of underdeveloped countries.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 681 or consent of instructor.

Typically Offered

Other

ECON 830 - Econometrics I**Credits 3**

Fundamentals of econometric analysis. The classical linear model, multi-collinearity, specification error, distributed lags, non-normal disturbances, dummy variables, generalized least squares, autocorrelation, heteroscedasticity. Applications to specific problems.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 520; and MATH 205 or MATH 220; and STAT 706.

Typically Offered

Spring

ECON 832 - Public Sector Analysis**Credits 3**

Conditions for economic efficiency in the public sector; public good production functions; nonmarket decision making; rationale for public sector growth; systems analysis, cost-benefit and related techniques of allocating public goods.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 633.

Typically Offered

Other

ECON 840 - Managerial Economics**Credits 3**

Economic analysis of production, cost, and demand functions. Application of economic models to managerial decision making.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 520; and MATH 205; and one course in statistics with a prerequisite in the same department.

Typically Offered

Fall

ECON 881 - Topics in International Trade and Development Economics**Credits 3**

Covers key topics of current interest international trade and development economics, including new theories of firm-level comparative advantage and offshoring, outsourcing, and multinational activities.

Repeat for Credit

N

Requisites

Prerequisite: ECON720, ECON940, or consent of instructor

Typically Offered

Spring-Odd Years

ECON 890 - Seminar in Economics**Credits 1-3**

Course will provide seminars on specific topics in economics.

Note

Prerequisites vary with announced subject matter.

Repeat for Credit

Y

Typically Offered

Other

ECON 895 - Problems in Economics**Credits 1-18**

Advanced individual study is offered in selected subject matter.

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for problems being studied. ECON 898. Master's Report in Economics. ECON 899. Master's Research in Economics.

Typically Offered

Fall, Spring, Summer

ECON 898 - Master's Report in Economics**Credits 1-18**

Master's Report in Economics

Repeat for Credit

Y

Typically Offered

Other

ECON 899 - Master's Research in Economics**Credits 1-18**

Master's Research in Economics

Repeat for Credit

Y

Typically Offered

Other

ECON 905 - Macroeconomic Theory II**Credits 3**

A study of advanced topics in macroeconomic theory including general equilibrium analysis, economic growth, business cycle theory, and other developments in macroeconomic theory.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 805 and ECON 735.

Typically Offered

Fall

ECON 910 - Topics in Macroeconomics**Credits 3**

Exploration of seminal and current research in macroeconomic topics such as growth, business cycles, or public policy. Topics will be related to the research interests of the professor and students.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 805 and ECON 905.

Typically Offered

Fall, Spring

ECON 915 - Macroeconomic Modelling

Credits 1-3

Examines current topics in macroeconomics with an emphasis on empirical modelling. The course will be structured to allow the student an in-depth look at influential articles in the literature through presentations and required summary papers, and apply similar skills in an assigned original research paper.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 735 and ECON 805.

Typically Offered

Other

ECON 920 - Labor Economics Seminar

Credits 3

A critical analysis of wage theories, collective bargaining, and unemployment problems.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 620 or consent of instructor.

Typically Offered

Other

ECON 925 - Location of Economic Activities

Credits 3

An examination of the theory of location including central place theory, location of the individual producer, industrial location patterns, and urban land-use models. Also includes application of theoretical models to current urban problems.

Repeat for Credit

Y

Typically Offered

Other

ECON 927 - Advanced Labor Economics

Credits 3

An examination of studies in labor supply, labor demand, immigration, and current topics in labor economics.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 730 or concurrent enrollment in ECON 720.

Typically Offered

Other

ECON 930 - Econometrics II

Credits 3

Continuation of Econometrics I. Stochastic regressors, asymptotic results, instrumental variable estimation, systems of equations, maximum likelihood estimation, nonlinear least squares, and other miscellaneous topics in econometrics.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 830.

Typically Offered

Fall

ECON 935 - Time Series Econometrics

Credits 3

Discussion of recent advances in time series econometrics. Economic forecasting, vector autoregressive modeling, unit root testing, cointegration, and other topics.

Repeat for Credit

N

Requisites

Prerequisite: ECON 930 or consent of instructor.

Typically Offered

Fall

ECON 938 - Microeconometrics

Credits 3

A survey of recent advances in microeconometrics, including panel data, treatment effects, and other topics, to provide students with the analytical tools used in economic research.

Repeat for Credit

N

Requisites

Prerequisite: ECON 830.

Typically Offered

Fall

ECON 940 - Advanced Microeconomic Theory I**Credits 3**

An examination of demand, production, and cost theories; a discussion of duality theory and the application of the Le Chatelier principle; an analysis of price and output determination in different market structures.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 520 and ECON 735.

Typically Offered

Spring

ECON 945 - Advanced Microeconomic Theory II**Credits 3**

A study of advanced topics in economic theory, including general equilibrium theory, welfare economics, and risk and uncertainty.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 940.

Typically Offered

Fall

ECON 947 - Industrial Organization**Credits 3**

Theory of industrial organization and its analytical techniques. Game theory; monopoly pricing; product and quality selection; vertical control; static and dynamic theories of oligopoly; product differentiation, price dispersion, and advertising; asymmetric information and strategic behavior.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 735.

Typically Offered

Other

ECON 948 - Empirical Industrial Organization**Credits 3**

Analysis of market outcomes resulting from behavior and strategy of economic agents in imperfectly competitive markets, using econometric methods. Topics may include: models of consumer demand and methods of estimation; identifying and measuring market power and market effects of mergers; static models of entry and industry structure; single-agent dynamic structural models; dynamic oligopoly games; production, technology and industry structure; and other recent advances in empirical industrial organization.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 940 and ECON 830, or consent of instructor.

Typically Offered

Other

ECON 955 - Theory and Methods of Regional Economic Analysis**Credits 3**

A consideration of differences in regional and urban

growth; comparison of alternative growth theories; methods of analyzing regional economics such as input-output analysis, linear programming, industrial complex, and spatial interaction models.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 925 or consent of instructor.

Typically Offered

Other

ECON 981 - International Trade Theory and Policy

Credits 3

Discussion of recent literature in trade theory and policy under imperfect competition. International trade in imperfectly competitive international markets, strategic trade policies, political economy of trade protectionism, welfare effects of trade liberalization and economic integration, and other issues.

Repeat for Credit

Y

Requisites

Prerequisite: ECON 735.

Typically Offered

Other

ECON 999 - PhD Research in Economics

Credits 1-18

PhD Research in Economics

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDACE 502 - Independent Study in Adult Learning and Leadership

Credits 1-3

Selected topics in professional education.

Note

Maximum of 3 hours applicable toward degree requirements. Consent of department chair.

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDACE 714 - International Education

Credits 3

Contemporary overview of the field of international education and an introduction to three of its parts. Comparative education, intercultural education, and development education.

Repeat for Credit

N

Typically Offered

Other

EDACE 733 - Practicum in Adult Learning and Leadership

Credits 1-6

Related occupational or professional experiences in approved industry, school, Cooperative Extension Service, or similar agency setting under faculty supervision.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDACE 750 - Women, Education, Leadership, and Work

Credits 3

Emphasizes the collective and individual educational needs of women in and out of the work force and the part that

occupational/educational preparation contributes to their participation in the work force.

Repeat for Credit

N

Typically Offered

Other

EDACE 765 - Adult Learners and Integrating Technology into Curriculum

Credits 3

This course includes an in-depth study of methods for integrating innovative technologies into the curriculum for adult learners. With an in-depth understanding of adult learners, students will analyze learning theories and appropriate technologies for relevance, effectiveness, and alignment with course curriculum.

Repeat for Credit

N

Requisites

Recommended Foundation Course: EDACE 790.

Typically Offered

Fall, Spring, Summer

EDACE 775 - Readings in Adult Learning and Leadership

Credits 1-3

Readings in research and application in specialized areas in education.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Other

EDACE 780 - Introduction to Adult Learning and Leadership

Credits 3

A survey of adult learning and leadership field.

Consideration given to articulation with other levels of education. Identification of changing needs within the field are reviewed.

Repeat for Credit

N

Typically Offered

Other

EDACE 782 - Educational Gerontology

Credits 3

For both the practitioner and those interested in educational gerontology as a field of inquiry. It will examine education for and about aging, with particular reference to the role, needs, and ability of persons in the later years as learners.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDACE 785 - Designing Classroom Instruction and Curriculum for Adult Learners

Credits 3

This course focuses on the systematic approach to instructional design for adult learners. A comprehensive discussion of all major components of curriculum design from instructional objectives, course sequencing, instructional strategies, formative assessments and summative evaluations will be included. A major focus will also be on transfer of learning.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 786 - Topics in Adult Learning and Leadership

Credits 1-3

Examination of current topic in area of specialization of

faculty.

Note

Varied topics offered each semester so course may be repeated.

Repeat for Credit

Y

Typically Offered

Other

EDACE 790 - Characteristics of the Adult Learner

Credits 3

For teachers and administrators in adult and occupational programs who need a familiarity with the major characteristics of adulthood which affect the adult as a learner.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 792 - Hospital and Industry Adult Learning and Leadership

Credits 3

An introduction to principles, roles, organization, procedures, and problems of adult learning and leadership in hospitals, industry, and related agencies.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDACE 795 - Problems in Adult Learning and Leadership

Credits 1-18

Independent study of specific problems in the areas of adult learning and leadership.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Other

EDACE 815 - Introduction to Community Educational Development

Credits 3

A comprehensive review of factors related to community change and the role of educational programs in dealing with them. Emphasis is on educational and economic problem-solving approaches and change-implementing programs.

Repeat for Credit

Y

Typically Offered

Other

EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice

Credits 3

This course focuses on the principles of social justice education that promote equitable, sustainable, and transformative change in various formal and non-formal educational settings across the lifespan. The course integrates theoretical and practical aspects of social justice in local, national and international settings such as K-12 formal education, higher education, adult education, community development, and family education, and agricultural education.

Repeat for Credit

N

Typically Offered

Fall, Summer

EDACE 817 - Reflective Practice in Social Justice Education

Credits 3

This course focuses on the application of principles of

social justice education in informal and formal educational settings. Student-conceptualized and -implemented theory-to-practice social justice education projects serve as the capstone or culmination of the graduate certificate, with projects presenting powerful opportunities for students to foster social change and positively impact the communities in which they work.

Repeat for Credit

N

Requisites

Prerequisite: EDACE 816.

Typically Offered

Fall, Spring, Summer

EDACE 818 - Critical and Social Issues in Adult Learning

Credits 3

Designed for adult learning and students and college or university personnel in sociology and related fields dealing with adults, this course focuses on the economic historical and sociocultural context in which learning takes place. Included is an in-depth examination of the relationship between adult learning and culture.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 820 - Principles of Teaching Adults

Credits 3

This course will explore the theory and practice of teaching adults. Collaborative and active learning techniques will be emphasized in face-to-face and online environments. Students will examine the strengths, weaknesses, and appropriate application of a variety of methods to different adult education environments.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDACE 822 - International Adult Education and Literacy

Credits 3

This course provides an introduction to the foundations of global, political, social-economic and educational issues facing international adult education and literacy students for English as a Second Language learners.

Repeat for Credit

N

Typically Offered

Spring, Summer

EDACE 824 - Teaching Online in Adult Learning

Credits 3

This course examines online adult learning theories, online pedagogies, current research, and trends in e-education for the workplace and higher education.

Repeat for Credit

N

Typically Offered

Spring

EDACE 825 - Theory and Practice of Continuing Education

Credits 3

Specific instruction on facilitating continuing education programs; emphasis on serving the institution, part-time students, community, and other interests.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDACE 830 - Program Planning in Adult Learning and Leadership

Credits 3

An examination of the basic situations in which adult

education occurs and fundamental steps by which learning is made more effective in those situations.

Repeat for Credit

N

Typically Offered

Other

EDACE 831 - Teaching and Leading Multigenerations of Adults

Credits 3

Examines the traits of generations as defined as age cohort that shares unique formative years. The context of teaching and leading multigenerations will be addressed. Students will learn how to apply concepts to foster communication and collaboration of all generations present.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

EDACE 832 - Interpersonal and Intrapersonal Dynamics in Adult Learning and Leadership

Credits 3

This course explores various psychological and sociological factors that impact leadership. Through examining topics like verbal and nonverbal communication, active listening, learning and presentation styles, emotional intelligence, conflict, and motivation, students gain a deeper understanding of how these factors affect their personal leadership styles and impact adults they are leading.

Repeat for Credit

N

Typically Offered

Spring, Summer

EDACE 833 - Digital Leadership Development in Adult Education

Credits 3

Provides an essential introduction into digital leadership

development (DLD) in adult education. Helps students acquire the skills and competencies required of adult educational leaders and administrators to make well-grounded decisions in providing leadership on planning and designing digital learning environments and experiences. Also discusses social, ethical, and human issues related to digital leadership development and adult learners.

Repeat for Credit

N

Typically Offered

Summer

EDACE 834 - Leading Adults in a Globalized and Diverse World

Credits 3

This course provides an introduction to the foundations of adult education leadership in the context of managing a culturally diverse workforce. Concepts of globalization as well as cross- cultural and international environments as they relate to adult education leadership are emphasized through theory to practice projects and research.

Repeat for Credit

Y

Typically Offered

Fall

EDACE 835 - Developing Teams and Adult Leaders

Credits 3

This course will examine how teams and leaders can be developed using adult learning and leadership theories and principles.

Repeat for Credit

N

Typically Offered

Spring

EDACE 836 - Group Dynamics in Adult Learning and Leadership

Credits 3

This course focuses on group and team behavior and processes in the adult education environment. Various factors that impact group behavior, processes, and effectiveness will be examined and participants will learn skills needed to more effectively manage and facilitate groups and teams of adults to achieve organizational objectives, accomplish tasks, and fulfill individual members' needs.

Repeat for Credit

N

Typically Offered

Spring, Summer

EDACE 837 - Quality Programs and Staff Management in Adult Learning and Leadership

Credits 3

Utilizes the use of adult education theories of program administration to enhance student understanding of staff and team dynamics. Focuses on developing interpersonal skills so that students can be more effective leaders, problem solvers, motivators, coaches, and change managers.

Repeat for Credit

N

Typically Offered

Fall, Summer

EDACE 838 - Volunteer Leadership Education

Credits 3

Introduce students to managing and leading volunteers using an adult model. Volunteers are very similar to employees—both have to be managed, coached and trained.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 839 - Experiential Learning and Leadership Dynamics

Credits 3

Framed in the theory of experiential learning, students will apply theories and principles learned throughout the leadership dynamics program to a professional problem/setting. Students will present their experiences to a panel of academic and professional practitioners.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 845 - Social Media and Adults in the 21st Century

Credits 3

This course addresses the most popular social media and helps students understand the promise and challenge that social media has brought to 21st century working adults. Example topics include but are not limited to Social Media and adult learning, Social Media in the workforce, and new technology literacy in 21st century.

Repeat for Credit

Y

Typically Offered

Spring

EDACE 847 - Adult Learning and Motivation

Credits 3

Core course of adult learning perspectives and motivation for learning.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 850 - Self-Directed Learning

Credits 3

Self-directed or independent learning is an important aspect of adult education because it represents a significant portion of all learning by adults. The concept was instrumental in distinguishing the fields of adult education.

During this course, students will explore self-directed learning from both an academic and a personal perspective. Topics include its history and development, its research base, areas of current interest and implications for adult education practice.

Repeat for Credit

N

Typically Offered

Summer

EDACE 851 - The Historical and Contemporary Community College

Credits 1

Focus on developing an understanding of historical and contemporary issues that have shaped and continue to impact community colleges. Students will develop and improve skills that are outlined in the leadership competencies published by the American Association of Community Colleges.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 852 - Field Study: The Historical and Contemporary Community College

Credits 1

Field studies exposes students to a systematic approach to identify and analyze historical issues and issues facing contemporary community college leaders. The implications of issues for community colleges are to be considered from a leadership perspective.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 851.

Typically Offered

On sufficient demand

EDACE 853 - Access, Equity, and Success

Credits 2

Students will explore the assets, experiences, and institutional challenges of community college students based upon personal characteristics such as race/ethnicity, socioeconomic status, age, gender, sexuality, disability, military status, and religion; and the national "best-practice" strategies currently being used to increase enrollment, persistence, and program completion for these diverse student groups.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 854 - Field Study: Access, Equity, and Success

Credits 1

Provide an opportunity for students to reflect about challenges in changing community college cultures and structures from a traditional student-deficit model to a student-asset model accounting for the increasing diversity among community college students.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 853

Typically Offered

On sufficient demand

EDACE 855 - Aligning Vision, Planning, and Resources

Credits 2

Study ways to understand, work with, and improve upon the financial model of community colleges and will help develop skills needed to do so.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 856 - Field Study: Vision, Planning and Resources**Credits 1**

Students will identify and analyze financial issues being faced by community colleges throughout the United States. Students will explore methods to analyze and develop viable financial solutions to address the identified issues. The legacy mission of community colleges has grown in tandem with expectations. Yet public funding of most community colleges has decreased, is less predictable, and has not kept pace with enrollment growth. These pressures compel fresh thinking about mission, priorities, resource generation, and cost containment.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 855

Typically Offered

On sufficient demand

EDACE 857 - Effective Leadership and Theory**Credits 4**

Students will be introduced to leadership issues in higher education through individual, interpersonal, team, and leadership theory and practical applications. A central premise of this course is to examine effective leadership practices and theories as lenses for examining leadership issues and comparing and contrasting practical applications in community colleges and competencies by their leaders while considering the terrain in which they function.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 858 - Field Study Effective Leadership**Credits 1**

Students will analyze community college cases studies and leadership issues and make recommendations as to how best meet the challenges described. Students will differentiate among leader competencies and lenses and assess their potential relevance to addressing community college issues and priorities. Students will also examine issues impacting colleges and implications for effective leadership development.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 857

Typically Offered

On sufficient demand

EDACE 859 - Effective Leadership Institute**Credits 1**

Students will travel to urban and rural community colleges and districts to meet with their respective chancellors, presidents, and leadership teams. Students will interact with board of trustee members, state educational association leaders, and other national community and technical college leaders.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered
On sufficient demand

EDACE 860 - Innovative Higher Education Programs for Adults

Credits 3

Designed to provide a conceptual understanding of innovative systems and structures currently serving higher education needs of adult learners. The course will provide a historical basis for the development of these programs as well as future trends. Included will be discussions of corporate colleges, external degree programs and distance/online learning.

Repeat for Credit
Y

Typically Offered
On sufficient demand

EDACE 861 - Fostering Desired Culture: Fundamentals & Strategies for Org Development

Credits 2

Focus on helping students to create organizational structures designed to thrive by fostering entrepreneurialism and innovation throughout the organization. This course will also focus on consideration of inclusion and equity in organizational design and development.

Repeat for Credit
N

Requisites
Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered
On sufficient demand

EDACE 862 - Field Study: Organizational Development

Credits 1

Students will engage with community college leaders throughout the country concerning contemporary

organizational challenges. Using research, students analyze a community college situation and make recommendations to the leader as to how best address the contemporary organizational challenges.

Repeat for Credit
N

Requisites
Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 861

Typically Offered
On sufficient demand

EDACE 863 - Creating a Culture of Evidence and Inquiry

Credits 2

Students will explore how to develop and foster of cultures of evidence and inquiry from enrollment to outcomes. Other important topics include development and use of actionable information to make decisions and measure effectiveness, and robust common measures to benchmark and improve institutional performance

Repeat for Credit
N

Requisites
Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered
On sufficient demand

EDACE 864 - Field Study Enrollment to Outcomes

Credits 1

Designed to enable participants to apply the principles of evaluation to developing a program evaluation for a student success initiative.

Repeat for Credit
N

Requisites
Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered
On sufficient demand

EDACE 865 - Principles of Workplace Learning

Credits 3

This course provides an overview of various aspects of workplace learning initiatives as found in the related professional literature and from various practice-related venues. Major topics include evolution of the process of workplace learning and the profession of training; assessing and analyzing workplace learning needs; designing and delivering workplace learning programs; and measuring and evaluating the impact of workplace learning initiatives.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

EDACE 866 - Adult Learning, Training, and Development in Organizations

Credits 3

Examines through adult education principles and techniques, training and development in relation to adult learning and as one of the central functions of human resource development (HRD). The focus of the course will be on expanding the students' knowledge related to organizational learning and learning organizations from educational principles; training and development concepts, frameworks, methods, and processes; and planning data-informed learning, training, and development programs, with a particular focus on adult education context.

Repeat for Credit
N

Typically Offered
Spring

EDACE 867 - Managing Change in Adult Learning and Leadership

Credits 3

Introduces students to the process, models, and theories of change with the goal of increasing students' effectiveness in

dealing with multiple aspects of personal and organizational change, inclusive of understanding conditions that may require change, increasing awareness of multiple ways that organizations change, understanding the role of change agents, as well as understanding and managing resistance to change.

Repeat for Credit
N

Typically Offered
Spring

EDACE 875 - Program Evaluation in Adult Learning and Leadership

Credits 3

This course will provide an overview of various methods and strategies for evaluating educational programs for adults. Students will have the opportunity to examine the literature that is related to the program evaluation process in adult education settings. Opportunities to study the manner in which the process of program evaluation is conducted in modern programs for adults in governmental, educational, and private and public sector organizations will also be provided.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

EDACE 879 - The Community College Curriculum and Instructional Services

Credits 3

Evaluation of community college curricula; reasons for revision, aims and objectives. Designed to familiarize student with the entire curricular offerings of the comprehensive community college.

Repeat for Credit
Y

Typically Offered
On sufficient demand

EDACE 880 - Significant Literature of Adult Learning

Credits 3

A seminar studying the significant literature of adult learning from a current and historic perspective.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 882 - Introduction to Educational Research**Credits 2**

Introduce students to educational research methods, paying particular attention to the ways in which research can be used to understand and improve daily education practice, particularly in higher education. Key differences between qualitative, quantitative, mixed methods, and action research designs are highlighted.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 883 - Field Study: Educational Research**Credits 1**

The purpose of this Field Study in introductory educational research methods is to enable participants to apply concepts learned in EDACE 882 Introduction to Educational Research to critiquing various journal articles reporting primary research and further developing their understanding of research questions and various research methodologies, as well as, to provide opportunities to be consumers of research.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 882.

Typically Offered

On sufficient demand

EDACE 886 - Seminars in Adult Learning and Leadership**Credits 1-18**

These seminars will consider research and professional development on the special interests of the students in the several fields of education represented.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDACE 898 - Master's Report**Credits 1-18**

Master's Report

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Other

EDACE 899 - Master's Research**Credits 1-18**

Master's Research

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Other

EDACE 916 - Foundations of Adult Learning and Leadership

Credits 3

A study of adult learning and leadership historical perspectives, contemporary institutions and programs, teaching-learning process, administrative practices, and conceptual roles.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDACE 920 - Educational Value Choices**Credits 2**

Students explore the prevalence of value choices confronting educational leaders in a community college setting, the influence personal values have on educational value choices, and the how educational leaders can maintain integrity in navigating the choices.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 921 - Field Study Ed Value Choices: Access, Equity, and Success**Credits 1**

Focuses on the practical application of leadership integrity in approaching educational value choices within a community college setting.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 920.

Typically Offered

On sufficient demand

EDACE 922 - Policy Formation and Public Process**Credits 2**

Designed to provide students with a thorough background to the principal public policy issues that are impacting American community college education. The background and analysis will be viewed through a specific theory of public policy and decision making as a means of structure.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 923 - Field Study Policy and Public Process**Credits 1**

The opportunity to: (1) examine the theory of public policy and political decision making; and (2) work in-depth on a chosen issue of public policy related to community college education

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 922

Typically Offered

On sufficient demand

EDACE 924 - Effective Governance and Leadership**Credits 2**

Investigate the contributory roles of all employees and employee structures within the framework of college governance.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 925 - Field Study Governance and Leadership**Credits 1**

Analyze identified problems in college governance; identify the role and responsibilities of key players in the development and implementation of policies and strategies; develop both detailed and wide-ranging response strategies to identified problems; and, implement a shared collective vision of problem solution.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 924

Typically Offered

On sufficient demand

EDACE 926 - Leadership for Transformation**Credits 2**

Explore change and transformation theory and practice in contemporary community colleges. A widely-used change process will be used as an anchor from which to examine in depth real-world transformation efforts underway in the community college.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 927 - Field Study Leadership for Transformation**Credits 1**

This field experience exposes students to change process, transformation theory and practice in contemporary community colleges. Students will meet with current community college leaders who will address the change process, transformation, vision and strategy, champions, innovation, communication and celebration of successes in a community college setting.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 926.

Typically Offered

On sufficient demand

EDACE 928 - Designing a Comprehensive Plan for Success**Credits 2**

Designed to review and incorporate the tenets of a leadership framework for designing a desired transformation in a community college or district. Upon completion of this course, students will be able to identify, describe, and design the key components for planning, implementing, and evaluating an institutional transformation initiative to address a complex issue relevant to the college/district and the communities, state, or region it serves.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 929 - Field Study Plan for Success**Credits 1**

Provide an opportunity for students to reflect about challenges in introducing and institutionalizing desired culture change and effective best practices to develop the envisioned future. Students will identify and articulate

leadership and organizational skills necessary for transformational work.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 928

Typically Offered

On sufficient demand

EDACE 930 - Implementing Leadership Competencies

Credits 2

Students will identify the major competencies necessary to become a more effective and efficient leader and how these competencies align with those identified by the American Association of Community College Leaders (AACC). The course includes practical application of leadership, completing a self-assessment of core leadership competencies, and developing a personal leadership growth plan. Also, students will work in teams to develop a leadership institute that can be used in a community college setting.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 931 - Field Study (Institute) Leadership Competencies

Credits 1

Provides students with the opportunity to participate daily in discussions, develop a leadership institute, engage in reflection activities, and participate in a process for effective interviewing.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 930

Typically Offered

On sufficient demand

EDACE 937 - Organization and Administration of Adult Learning and Leadership

Credits 3

A critical study of organizational procedures and administrative practices as related to the implementation and maintenance of effective program for adults.

Repeat for Credit

Y

Typically Offered

Other

EDACE 940 - Adult Development and Learning

Credits 3

Study all pertinent adult development theories.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 960 - Introduction to Doctoral Studies

Credits 3

Provides an overview of the course sequence and dissertation process. The objective is to start students preparing for their dissertation early so they can finish in a timely manner. This course also addresses work-life balance between being a leader, a student, and having a family and personal life outside of work.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 970 - Dissertation Development

Credits 4

Introduction to the essential organizational and writing skills required for completing a dissertation. Upon completion of this course, students will be able to identify and describe the key steps in developing and writing the dissertation proposal and dissertation.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership.

Typically Offered

On sufficient demand

EDACE 971 - Field Study Dissertation Development I

Credits 1

Review the main components of the dissertation. Students will select the research topic under investigation and develop an argument that demonstrates the need for the study.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 970.

Typically Offered

On sufficient demand

EDACE 972 - Field Study: Dissertation Development II

Credits 1

Designed to provide an overview of the writing and organization skills necessary for the completion of a literature review and research methodology germane to writing a dissertation. Upon completion of this the course, students will be able to design and conduct a literature review and research methodology that addresses the research topic under investigation.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the Ed.D. in Community College Leadership. Corequisite: EDACE 971

Typically Offered

On sufficient demand

EDACE 975 - Scholarly Writing

Credits 3

Enables students to develop the writing skills they need to become successful writers in their academic and post-academic careers. Course topics focus on students' disciplines and include annotated bibliographies, critiques, and literature reviews.

Repeat for Credit

N

Requisites

Prerequisite: EDACE 960

Typically Offered

Fall, Spring, Summer

EDACE 980 - The Dissertation Process

Credits 3

Dissertation proposal development is one of the major challenges encountered toward earning a doctoral degree. This course outlines the basic components of a dissertation study with a focus on the proposal—the dissertation's first three chapters. It then focuses on developing and writing chapter one. It is important that each student has a general idea for his or her dissertation research topic prior to the class start date. In addition to working with the course instructor, each student is expected to work closely with their major advisor.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDACE 986 - Advanced Seminars in Adult Learning and Leadership

Credits 1-18

These seminars will critically consider recent research in the designated fields. The emphasis will be upon individual studies and small group interaction. Enrollment is restricted to those students who have been admitted to the doctoral program in education and who have completed substantial amounts of graduate study in the designated fields.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDACE 991 - Internship in Adult Learning and Leadership**Credits 1-6**

Field experiences in the development of programs in cooperating schools and educational or related agencies under the supervision of College of Education graduate faculty member.

Note

A maximum of six credit hours. Consent of instructor.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDACE 999 - Doctoral Research**Credits 1-18**

Doctoral Research

Repeat for Credit

Y

Typically Offered

Other

EDCEP 103 - Healthful and Safe College Life**Credits 3**

Addresses pertinent health education topics that impact college students and explores the effect of lifestyle choices on academic achievement. Topics include sexual health,

mental health, nutrition and fitness, alcohol/drugs/tobacco, injury and illness prevention education.

Note

Not intended to replace the HN 352 Personal Wellness course when required in a curriculum.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

EDCEP 109 - Supplemental Instruction**Credits 1**

Peer-facilitated supplemental instruction that supports learning in affiliated course. Practice and development of study skills, learning strategies, and specific learning goals.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCEP 110 - Study Skills and Strategies**Credits 1-3**

Assists first-year students in developing effective study skills, collaboration skills, and multicultural competencies. Prepares students for the independent learning and decision-making skills needed for their sophomore year and beyond.

Note

Recitation.

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDCEP 111 - Foundations of College Student Success

Credits 1-3

Introduction to academic strategies that promote college student success. Topics include academic skills, including communication and critical thinking, time management, academic and career planning and goal setting, and community building.

Repeat for Credit

Y

Requisites

Prerequisite: New students or instructor consent.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

EDCEP 120 - Academic and Career Decisions**Credits 1**

Addresses general principles of academic and career choice through lectures, class discussions, and individual research. Topics include decision-making models and principles; exploration of interests, abilities, and values through career assessments; and academic and career investigation using interactive software, library materials, online resources, and experiential learning opportunities.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

EDCEP 160 - Development and Integrity**Credits 1**

Provides a general overview of ethics and ethical decision making in academia and professional life. It is designed to help students better understand issues about academic misconduct, as well as several approaches to thinking about and resolving ethical dilemmas.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCEP 202 - Career and Life Planning**Credits 2**

Applies theory research concerning assessment interest and career choice-making to individual's planning and decision-making. Focuses on increasing understanding of the complexities of the world of work and on skills of integrating such understanding with each person's planning experience, characteristics, motives, and values in the career exploration process. Reviews resume writing, interviewing skills, and job search techniques.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

EDCEP 211 - Leadership Training Seminar**Credits 2**

General principles of leadership as applied to small groups. Study of the role of the leader, group processes and interaction, defining group goals, and techniques of observation. Workshop and supervision in small group leadership.

Note

Offered only at the Manhattan campus.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing and consent of instructor.

Typically Offered

Fall, Spring

EDCEP 311 - Interaction and Guidance for the Paraprofessional**Credits 3**

Application of a systematic approach to interaction skills in a paraprofessional helping relationship. Includes background knowledge of listening skills and practice in emitting skills which influence interaction quality.

Note

Consent of instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing or sophomore standing

Typically Offered

Fall, Spring

EDCEP 360 - Peer Health Education and Leadership

Credits 3

This course is intended as an academic exploration of social health and wellness concerns pertinent to the college student population. Using the principles of public health, peer educators will explore the importance of health-promoting behaviors in the prevention of disease. Students will examine social factors that may influence behaviors between their peers and obtain background knowledge in listening and communication skills.

Repeat for Credit

N

Requisites

Prerequisite: WellCAT Ambassadors Application and Informational Interview is required to enroll.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

K-State 8 Tag 2

Ethical Reasoning and Responsibility

EDCEP 502 - Independent Study in Counseling and Educational Psychology

Credits 1-3

Selected topics in professional education.

Note

Maximum of three hours applicable toward degree requirements. Consent of department chair.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCEP 715 - Principles of Assessment

Credits 3

Principles of development, administration, evaluation, and constructive instructional use of paper-pencil, product, and performance assessments. Focus on norm-and criterion-referenced uses of teacher-made and published measures as an integral part of effective decision making in education.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315.

Typically Offered

Fall, Spring, Summer

EDCEP 775 - Readings in Counseling and Educational Psychology

Credits 1-3

Readings in research and application in specialized areas in education.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCEP 786 - Topics in Counseling and Educational Psychology

Credits 1-3

Examination of current topic in specialization of faculty.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

EDCEP 795 - Problems in Counseling and Educational Psychology

Credits 1-18

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of data pertinent to a given problem. All work is done independently under the direction of a faculty member. As many conferences are held as necessary to assure successful completion of a project & nbsp.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

EDCEP 802 - Stress Management for Teachers, Counselors, and Administrators

Credits 3

Systematic training in stress-management strategies and techniques for the professional educator and for use in classroom and counseling settings. Includes knowledge of self-directed and instrumental techniques, psychophysiology of stress, issues in stress management, and role of teacher and counselor in delivering stress-management training.

Repeat for Credit
Y

Typically Offered
On sufficient demand

EDCEP 810 - Mental Health in Schools

Credits 3

Examines mental health and risk factors in the context of schools and student learning. Topics include: characteristics and behaviors of at-risk students; and prevention, intervention, and referral strategies to facilitate and promote mental health and a positive learning

environment.

Repeat for Credit
N

Typically Offered
Summer

EDCEP 812 - History and Philosophy of Higher Education

Credits 3

History and development of higher education with a study of the philosophy, objectives, and functions of various types of institutions.

Repeat for Credit
Y

Typically Offered
Fall

EDCEP 815 - Using Tests in Counseling

Credits 3

Focus on the use of tests as an integral part of counseling. Emphasizes interpretation of scores, issues of psychological and educational measurement, and selection and evaluation of instruments.

Repeat for Credit
Y

Typically Offered
Spring

EDCEP 816 - Research Methods in Education

Credits 3

This course is designed to provide students with an overview of quantitative and qualitative research methods in education and to equip them with the knowledge to be competent consumers and producers of educational research.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

EDCEP 817 - Statistical Methods in Education

Credits 3

An introductory yet comprehensive survey of common statistical analyses encountered in educational research. Computer oriented.

Repeat for Credit

Y

Requisites

Prerequisite: A first course in college mathematics and STAT 702 or EDCEP 816.

Typically Offered

Fall, Summer

EDCEP 818 - Principles of Student Affairs Administration

Credits 3

Principles of practice, current professional issues, and future trends in college and university student affairs administration

Repeat for Credit

Y

Typically Offered

Spring

EDCEP 819 - Survey Research

Credits 3

Evaluation, interpretation, use, and production of survey research in education.

Repeat for Credit

Y

Requisites

Prerequisite: EDCEP 816

Typically Offered

Spring

EDCEP 821 - Fundamentals of Program Evaluation

Credits 3

Theory, approaches, and fundamental skills for planning and implementing program evaluation; focus on research (and evaluation) designs and methods; includes evaluation professional standards and ethics.

Repeat for Credit

N

Requisites

Prerequisite: EDCEP 816 or equivalent.

Typically Offered

Fall

EDCEP 822 - Counseling Adolescents

Credits 3

This is a foundation course for secondary school counselors and addresses issues relevant to secondary school counseling programs.

Repeat for Credit

N

Typically Offered

Summer

EDCEP 823 - Counseling Theory

Credits 3

Theories, methods, and problems in counseling, relating the counseling process to dynamics of human behavior.

Repeat for Credit

Y

Typically Offered

Fall, Summer

EDCEP 824 - Development Across the Lifespan for School Counselors

Credits 3

Advanced studies in physical, intellectual, emotional, social, and personality development across the lifespan with the focus on the importance of these factors to the educational process.

Repeat for Credit

Y

Typically Offered

Summer

EDCEP 826 - Student Success and Learning in Higher Education**Credits 3**

The purpose of this course is to provide an in-depth knowledge of the factors and circumstances that lead to college student success and learning in higher education. The most recent research in the field will be reviewed, meaning that the topics receiving the most attention via research will form the basis of the content for the course.

Repeat for Credit

N

Typically Offered

Fall

EDCEP 829 - Learning Principles**Credits 3**

Exploration of learning theories and an overview of research on factors that enhance academic performance, including psychosocial variables, learning styles, and learning strategies. The course covers strategies for enhancing student academic performance, ranging from assessment to implementation.

Repeat for Credit

Y

Typically Offered

Spring

EDCEP 830 - Diversity in Higher Education.**Credits 3**

Addresses diversity in higher education administration and practice. Examples of topics examined in the context of diversity include recruitment and retention, program development, campus climate, and multicultural student organizations.

Repeat for Credit

N

Typically Offered

Summer

EDCEP 831 - Current Issues in Higher Education**Credits 3**

Current issues in higher education are examined. Students learn to identify current issues and how professional administrators effectively address these issues. Individual topics or issues that are part of the larger campus climate are studied.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 832 - Counseling Techniques**Credits 3**

Practice basic helping skills common to the counseling profession using live supervision and videotape/transcription. Additional skills developed include problem conceptualization, goal setting, and selecting theoretically appropriate counseling interventions.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 835 - Foundations of Academic Advising**Credits 3**

Examines the foundations of academic advising as essential components of student success and retention in higher education. Topics include developmental advising; research on academic advising; models and delivery systems; advising skills, including diverse populations; and evaluation, assessment, and reward systems for advisors and advising programs.

Repeat for Credit

Y

Typically Offered

Fall

EDCEP 836 - Interpersonal Relations for Academic Advising

Credits 3

This course focuses on developmental communications/interpersonal relations skills for academic advisors. Topics to be addressed include influences on the helping process, such as personal characteristics, verbal and nonverbal responses and behaviors, and ethical considerations.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDCEP 837 - Individualized Learning Experience in Higher Education

Credits 3

The focus of this course is for students to gain a valuable experience in the summer to enhance the application of classroom learning to practical experience. Students can choose from three options to meet course requirements: complete a summer internship (e.g., NASPA, ACUHO-I, NODA, other institution), participate in a rotational program with Kansas State's Division of Student Life, or develop a special project with a faculty member (e.g., curriculum development, research activity) that results in a final product. The format of this course will allow the sharing of information with each other so that all may learn from others' experiences regardless of location.

Note

Consent of Instructor required to enroll.

Repeat for Credit

N

Typically Offered

Summer

EDCEP 838 - Student Development Theory

Credits 3

Study of the American college student and how he/she is influenced by institutional policies, practices, and other environmental variables. Special attention will be given to contemporary student development theory and research.

Repeat for Credit

Y

Typically Offered

Fall

EDCEP 839 - Assessment of Academic Advising

Credits 3

The role of quality academic advising is key to student success, graduation, and completion as identified in the research and literature on the undergraduate student experience. However, the quality and the effectiveness of the academic advising experiences must be assessed. This course will focus on a review of the foundations of academic advising, the key terms and processes of assessment, and the strategies and processes used to assess academic advising.

Repeat for Credit

N

Requisites

Prerequisite: EDCEP 816

Typically Offered

On sufficient demand

EDCEP 851 - Multicultural Aspects of Academic Advising

Credits 3

This course introduces students to the various cultural, ethnic, racial, and linguistic issues associated with advising practice.

Repeat for Credit

Y

Typically Offered

Other

EDCEP 852 - Career Development for School Counselors

Credits 3

Addresses the knowledge and competencies necessary for school counselors to use education, career, and labor market information resources, and career guidance and counseling techniques, methods, and technology in developing programs, services, and activities to meet the career development needs of students.

Repeat for Credit

Y

Typically Offered

Fall

EDCEP 854 - College Student Athletes

Credits 3

Study of college student athletes. Topics include the role of intercollegiate athletics, pressures and challenges on student athletes, student development theory, life skills programming, National Collegiate Athletic Association policy, diversity, and gender issues.

Repeat for Credit

N

Typically Offered

Summer

EDCEP 855 - Professional Counseling Orientation and Ethical Practice

Credits 3

Designed to provide an overview of ethics and legal issues in professional counseling. To understand different levels of analysis in evaluating ethical dilemmas and how to serve the client's needs while applying and implementing appropriate legal and ethical guidelines. Effective documentation, consultation, self-care, counselor transparency, and client participation to safeguard against the threat of litigation.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 856 - Counseling Children

Credits 3

The nature and philosophy of counseling in the elementary school; the function of specialized child appraisal and counseling techniques in the unique interrelationships of the professional school counselor and the teacher in the team approach to elementary school counseling.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 857 - Counseling Program Management

Credits 3

This course addresses the issues, knowledge, and competencies relevant to planning, implementing, and evaluating comprehensive school counseling programs to meet the needs of all students.

Repeat for Credit

Y

Typically Offered

Spring

EDCEP 858 - Group Processes

Credits 3

Designed to acquaint students with group procedures as basic tools in counseling, guidance, and other education services.

Repeat for Credit

Y

Typically Offered

Fall, Summer

EDCEP 859 - Introduction to Research Synthesis and Meta-Analysis in the Social Sciences

Credits 3

The course is an introduction to conducting systematic reviews of the literature and statistically analyzing the results. This course will focus on: (a) methods for conducting replicable, systematic reviews of the literature, and (b) statistical methods for analyzing the study effects (meta-analysis). Focus will be on examining studies with continuous, binary and correlations coefficient outcomes. Statistical methods will include fixed-effects, random-effects models, prediction intervals, meta regression, and publication bias. The course will emphasize basic theory and underlying statistical methods, computational approaches, and the interpretation of results from published studies.

Repeat for Credit

N

Requisites

Prerequisite: EDCEP 817, EDCEP 917

Typically Offered

On Sufficient Demand

EDCEP 860 - Trauma and Crisis Counseling**Credits 3**

Study of children and adults and the educational, psychological, social, and career development issues they face as a result of trauma and post-traumatic stress. Particular emphasis will be given to counseling theories and best practices for working with students and clients experiencing these issues.

Repeat for Credit

N

Typically Offered

Fall, Summer

EDCEP 863 - Trends in Career Development**Credits 3**

This course addresses the role of work in people's lives across the life span, with an emphasis on the application of career development theories, research, practice, and resources to higher education. Topics are presented to help professionals in higher education facilitate students' academic and career development, planning, and decision-making within the context of the changing world of work.

Repeat for Credit

Y

Typically Offered

Spring

EDCEP 864 - Current Issues in Intercollegiate Athletics**Credits 3**

Examines policies and procedures of the NCAA, roles and responsibilities within a department of intercollegiate athletics the historical relationship between intercollegiate athletics and higher education institutions, the creation of the NCAA and its policies, roles and responsibilities within a department of intercollegiate athletics, and relevant research. Topics include student-athlete health and well-being, marketing, fundraising, external relations, sports information, coaching, and academic support.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 867 - Counseling Mental Health Disorders**Credits 3**

An introduction to mental health disorders for counselors. Topics include assessment of mental health symptomology, using a diagnostic system to understand mental health issues, counseling strategies for working with individuals with diagnosed mental health issues, the impact of common medications used for mental health disorders, techniques for differentiating disordered and non-disordered behaviors, and promotion of mental wellness.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 871 - Leadership, Advocacy, and Consultation for Counselors**Credits 3**

This course acquaints students with the major models of

consultation that may be used by counselors for intervention with individuals and organizations. Techniques, issues and ethical considerations are also addressed.

Repeat for Credit
Y

Typically Offered
Spring

EDCEP 875 - Administration of College Student Personnel Services

Credits 3

Planning, budgeting, personnel supervision and evaluation, office management, administrative use of computers, program evaluation and related applications in the primary college student personnel services.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 818 and EDCEP 838.

Typically Offered
Fall

EDCEP 877 - Practicum in Counseling

Credits 3

This is a developmental counseling skills course addressing influences on the helping process such as personal characteristics, theoretical orientation, verbal and nonverbal behaviors, and ethical considerations. Includes research applications, case conceptualization, evaluation, simulation, and supervised individual and group practice in the field.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring

EDCEP 885 - Practicum in Higher Education

Credits 3

Supervised practical experience in a higher education setting.

Repeat for Credit
Y

Requisites
Prerequisite: Completion of 18 credit hours in the M.S. in College Student Development program and consent of instructor

Typically Offered
Fall, Spring

EDCEP 886 - Seminar in Counseling and Educational Psychology

Credits 1-18

Intensive discussion of a problem of current professional interest based on study of pertinent original literature.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
On sufficient demand

EDCEP 887 - Counseling Internship

Credits 1-3

This supervised internship includes activities that a regularly employed school counselor would be expected to perform. The student will engage in individual counseling, group work, developmental classroom guidance, use within an ethical framework and a sensitivity to individual characteristics.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 877 and consent of instructor

Typically Offered
Fall, Spring

EDCEP 898 - Master's Report

Credits 1-18

Master's Report

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDCEP 899 - Master's Research

Credits 1-18

Master's Research

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCEP 917 - Experimental Design in Educational Research

Credits 3

Philosophy, planning, and evaluation of research in education. Experimental designs appropriate for educational research with special emphasis on multivariate procedures. Computer oriented.

Repeat for Credit

Y

Requisites

Prerequisite: EDCEP 817.

Typically Offered

Spring, Summer

EDCEP 923 - Higher Education Law

Credits 3

This course will provide students with an overview of legal issues in higher education, with an emphasis on legal developments and trends in student affairs administration in particular.

Repeat for Credit

N

Typically Offered

Spring-Even Years

EDCEP 924 - Theories of Vocational Counseling

Credits 3

A historical and contemporary analysis of systems and theories of vocational psychology and their implications for use in the counseling setting.

Repeat for Credit

Y

Requisites

Prerequisite: EDCEP 852 or EDCEP 863.

Typically Offered

On sufficient demand

EDCEP 925 - Higher Education Finance

Credits 3

The purpose of this course is to provide an overview of finance in higher education. Current challenges related to public funding of higher education, from both the federal and state government, will be addressed in this course. Additional focus will be devoted to the structure and function of financial aid systems as well as to options for the reform of those systems.

Repeat for Credit

N

Typically Offered

Spring-Even Years

EDCEP 926 - Enrollment Management in Higher Education

Credits 3

Examines enrollment management theories, concepts, and research and the application of these to higher education administration. Students demonstrate enrollment management strategies through the development of a comprehensive enrollment management plan for use in a college or university setting.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

EDCEP 927 - Higher Education Administration**Credits 3**

Administration theory applied to the organization and administration of colleges and universities; special reference to structure, governing boards, administrative roles, decision-making, and analysis of selected problems.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

EDCEP 930 - Approaches to Academic Advising: Linking Theory, Research, and Practice**Credits 3**

This is an advanced study of foundational and emerging academic advising approaches. It aims to deepen student knowledge of the interdisciplinary scholarship and theory that underpin these approaches. Approaches will be from critical perspectives including applicability with different student groups and at different institutions; an evaluation of outcome research; and an exploration of assessment strategies.

Repeat for Credit

N

Requisites

Prerequisite: Admission to doctoral program Leadership in Academic Advising.

Typically Offered

Other

EDCEP 932 - Ethical Issues and Practice in Academic Advising**Credits 3**

This course explores ethical theories and principles, moral development frameworks, and value issues confronting academic advising leadership. It is based on the premise that all advising professionals are ethicists that make decisions every day. The course incorporates a comprehensive, interdisciplinary approach to ethical theories and practice in academic advising leadership.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the doctoral program Leadership in Academic Advising.

Typically Offered

Other

EDCEP 934 - Research in Academic Advising**Credits 3**

This course examines specific applications of theoretical, quantitative, qualitative, and mixed research methods in academic advising. The course provides a framework for the development of a research proposal directly related to critical questions in the field.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the Leadership in Academic Advising doctoral program.

Typically Offered

Other

EDCEP 937 - Administration of Academic Advising**Credits 3**

Examines and applies relevant theories, concepts, and

models of academic advising, as well as issues and other factors related to the administration of academic advising in higher education.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDCEP 948 - Advanced Student Development Theory in College Student Affairs

Credits 3

In-depth examination of the major young adult and adult development models and their implications within the context of student affairs in higher education.

Repeat for Credit

Y

Typically Offered

Fall-Even Years

EDCEP 951 - Multicultural Counseling

Credits 3

Adaptations of generic counseling skills to meet the needs of diverse populations.

Repeat for Credit

Y

Typically Offered

Summer

EDCEP 953 - Multicultural and Social Justice Issues in Counselor Education

Credits 3

An examination of multicultural and social justice issues related to the practice of counselor education and supervision. Emphasis on evidence-based counseling practices for a diverse and pluralistic population.

Repeat for Credit

N

Typically Offered

Spring

EDCEP 955 - Legal and Ethical Issues in Counseling

Credits 3

Examination of ethical standards developed by professional organizations of counselors. Current interpretations of standards and applications are developed through case studies, essays, reading, and literature review.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

EDCEP 957 - Teaching and Learning in Counselor Education

Credits 3

This course focuses on teaching and pedagogy of counselor education to improve delivery, teaching, and assessment of learning across modalities. This course focuses on understanding how learning works to effectively engage and teach counselors.

Repeat for Credit

N

Typically Offered

Summer

EDCEP 958 - Advanced Group Counseling

Credits 3

The examination of selected group counseling theories and their relevance for the practice of group counseling in a variety of settings.

Repeat for Credit

Y

Requisites

Prerequisite: EDCEP 858.

Typically Offered
Spring

EDCEP 959 - Practicum in Group Counseling

Credits 3

Supervised group counseling experience in a variety of settings.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 858 and EDCEP 958.

Typically Offered
On sufficient demand

EDCEP 962 - Leadership and Advocacy in Counselor Education and Supervision

Credits 3

An examination of leadership and advocacy issues related to the practices of counseling, counselor education, and counselor supervision. Emphasis on the development of ethical and culturally relevant leadership and advocacy practices.

Repeat for Credit
N

Typically Offered
Spring

EDCEP 967 - Appraisal and Psychopathology

Credits 3

Advanced application of appraisal models and methods for use with clientele. Specific personality tests and classification systems will be addressed.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 815 or admission into the Counselor Education and Supervision PhD program

Typically Offered
Spring-Even Years

EDCEP 977 - Advanced Counseling Practicum

Credits 3

Intense supervised practice in counseling. Particular emphasis will be given to the development of skills for intervention into human problems and time-limited case management.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 823, EDCEP 877, and EDCEP 887.

Typically Offered
Fall, Spring

EDCEP 985 - Advanced Counseling Theory

Credits 3

Reading and analysis of primary sources in major counseling theories. Written reaction papers, presentations, discussion, and development of a major paper on a personal theory.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 823 and EDCEP 887.

Typically Offered
Fall

EDCEP 986 - Advanced Seminar in Counseling and Educational Psychology

Credits 3

These seminars will critically consider recent research in the designated fields. The emphasis will be upon individual studies and small group interaction.. Enrollment is restricted to those students who have been admitted to the doctoral program in education and who have completed substantial amounts of graduate study in the designated fields.

Note
Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCEP 987 - Counseling Supervision Practicum**Credits 3**

An advanced course in the theory, techniques, and problems of supervising persons being trained as counselors. Course emphasis is on actual supervisory experiences with beginning counselors. Open to advanced doctoral students only with consent of instructor.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCEP 991 - Internship in Counseling and Educational Psychology**Credits 1-18**

Studies of and field experiences in the development of programs in cooperating schools and educational or related agencies under the supervision of Counseling and Educational Psychology graduate faculty members. A maximum of 6 credit hours may be chosen from the areas listed.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCEP 999 - Doctoral Research**Credits 1-18**

Individual investigation in the field of a student's specialization.

Note

Sufficient training to carry on the line of research undertaken.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCI 110 - Foundations of Education**Credits 3**

Examines the historical, political, philosophical, and sociological foundations of education in the United States including the evolution of career and technical education and changing demographics; ethical and legal issues; governance and financial support; and contemporary curriculum issues. Includes critical thinking and reflective decision making about educational issues.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

EDCI 111 - Foundations of Rural Education**Credits 4**

Examines the historical, political, philosophical, and sociological foundations of education in the United States including the evolution of career and technical education and changing demographics; ethical and legal issues; governance and financial support; and contemporary curriculum issues. Includes critical thinking and reflective decision making about rural educational issues.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 112 - Foundations of Urban Education

Credits 4

Examines the historical, political, philosophical, and sociological foundations of education in the United States including the evolution of career and technical education and changing demographics; ethical and legal issues; governance and financial support; and contemporary curriculum issues. Includes critical thinking and reflective decision making about urban educational issues.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 200 - Teaching as a Career**Credits 1**

Examines the roles, responsibilities, and dispositions of effective teachers; characteristics of the teaching/learning environment; the design of K-State's teacher education program; ways teachers change during their careers; and self-assessment about the commitment to teaching and preferences to grade levels or subject areas. An overview of the teacher education program is provided, the unit's conceptual framework is discussed, and the portfolio requirements are initiated. The skills of reflection and the dimensions of caring and ethical practice are introduced.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent enrollment required in EDCI 230 and sophomore standing.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

EDCI 201 - Teaching as a Career in Rural Contexts**Credits 2**

Examines the roles, responsibilities, and dispositions of effective rural teachers; characteristics of the rural teaching/learning environment; the design of K-State's teacher education program; ways teachers change during

their careers; and self-assessment about the commitment to teaching and preferences to grade levels or subject areas. An overview of the teacher education program is provided, the unit's conceptual framework is discussed, and the portfolio requirements are initiated. The skills of reflection and the dimensions of caring and ethical practice are introduced.

Repeat for Credit

N

Requisites

Concurrent enrollment required in EDCI 230 and sophomore standing.

Typically Offered

Fall, Spring

EDCI 202 - Teaching as a Career in Urban Contexts**Credits 2**

Examines the roles, responsibilities, and dispositions of effective urban teachers; characteristics of the urban teaching/learning environment; the design of K-State's teacher education program; ways teachers change during their careers; and self-assessment about the commitment to teaching and preferences to grade levels or subject areas. An overview of the teacher education program is provided, the unit's conceptual framework is discussed, and the portfolio requirements are initiated. The skills of reflection and the dimensions of caring and ethical practice are introduced.

Repeat for Credit

N

Requisites

Concurrent enrollment required in EDCI 230 and sophomore standing.

Typically Offered

Fall, Spring

EDCI 230 - Early Field Experience**Credits 1**

Includes 40 hours of supervised field experiences examining selected aspects of teaching and the learning environment, including students and learning, content and pedagogy, planning, instruction, and professionalism.

Requires written reports, analyses, and reflections for each weekly school visit.

Repeat for Credit

Y

Requisites

Corequisite: EDCI 200

Typically Offered

Fall, Spring

EDCI 300 - Principles of Coaching

Credits 3

Physiological, psychological, and kinesiological principles of coaching. Topics include training and conditioning, motivation, psychological factors affecting sport skill in performance, and mechanical principles underlying sport performance.

Note

Not for kinesiology majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 301 - Coaching and Officiating Methodology

Credits 3

Study of rules, theory, and practices; methods of coaching and officiating.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 311 - Current Issues in Education: Global Perspective

Credits 3

Examines current issues in K-12 education from a global perspective. Introduction to the concept of global education

and explore values, beliefs, behaviors, policies and customs from around the World.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 110

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

EDCI 315 - Educational Psychology

Credits 3

The application of psychological principles to the teaching-learning process with special emphasis on principles of learning, motivation, information processing, individual differences, and assessment.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education. Corequisite: EDCI 320

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

EDCI 317 - Educational Technology for Urban Teaching and Learning

Credits 2

This course introduces pre-service teachers to the use of contemporary instructional technologies to enhance instruction and to facilitate professional productivity. Attention is given to issues of access and diversity, with emphasis on the urban educational setting.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 318 - Educational Technology for Teaching and Learning

Credits 1

Introduces pre-service teachers to the use of contemporary instructional technologies to enhance instruction and to facilitate professional productivity. Attention is given to issues of access and diversity.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 319 - Educational Technology for Rural Teaching and Learning

Credits 2

Introduces pre-service teachers to the use of contemporary instructional technologies to enhance instruction and to facilitate professional productivity. Attention is given to issues of access and diversity in rural contexts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 320 - Core Teaching Skills and Lab

Credits 3

Examines instructional planning, differentiating instruction, direct and indirect instructional strategies, strategies to promote student understanding, managing lesson delivery, classroom management, assessing student performance, and working with colleagues and parents.

Note

Includes a lab session each week for detailed analysis of the issues and skill building.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education. Corequisite: EDCI 315

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

EDCI 321 - Core Teaching Skills and Lab for Rural Education

Credits 4

Examines instructional planning, differentiating instruction, direct and indirect instructional strategies, strategies to promote student understanding, managing lesson delivery, classroom management, assessing student performance, and working with colleagues and parents in rural education settings.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education. Corequisite: EDCI 315

Typically Offered

Fall, Spring, Summer

EDCI 322 - Core Teaching Skills and Lab for Urban Education

Credits 4

Examines instructional planning, differentiating instruction, direct and indirect instructional strategies, strategies to promote student understanding, managing lesson delivery, classroom management, assessing student performance, and working with colleagues and parents in urban education settings.

Note

Includes a lab session each week for detailed analysis of the issues and skill building.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education. Corequisite: EDCI 315

Typically Offered

Fall, Spring, Summer

EDCI 361 - PK-12 PE Motor Skills and Game Development

Credits 3

Equips future physical education teachers with the knowledge and skills to effectively teach motor skills and facilitate games in K-12 settings. Emphasizing developmentally appropriate practices, students will explore strategies for fostering motor skill acquisition, designing engaging lessons, and creating inclusive game-based learning experiences.

Repeat for Credit

N

Typically Offered

Fall

EDCI 365 - Problem-Based Learning and Computational Thinking in K-12 Schools

Credits 3

This course will focus on the application of problem-solving practices, computational thinking skills, and the development of critical thinking processes as a way of engaging K-12 students in learning through interdisciplinary projects.

Repeat for Credit

N

Typically Offered

Fall

EDCI 368 - Teaching Computer Science in Elementary Schools

Credits 3

Using block-coding students will participate in activities designed according to the research-based principles developed by the Raspberry Pi Foundation and the National Centre for Computing Education. Focus is placed upon developing concepts around variable, expressions, loops, and abstraction (VELA). Students will utilize a variety of unplugged to teach computing concepts. Students will also convert these activities into powerful lessons and units focused on real world examples of computing in our society.

Repeat for Credit

N

Typically Offered

Spring

EDCI 369 - Teaching Computer Science in Secondary Schools

Credits 3

The course will provide participants with the knowledge and ability to develop coding-based units for grades 7-12 which focus on coding in both block and text-based languages. Using Scratch (block coding) and either java or python (text coding) students will develop lessons and units which are designed according to the research-based principles developed by the Raspberry Pi Foundation and the National Centre for Computing Education.

Repeat for Credit

N

Typically Offered

Spring

EDCI 381 - PK-12 PE Assessment and Measurements

Credits 2

Provides an in-depth exploration of assessment principles and practices in PK-12 physical education. Emphasizing both theoretical foundations and practical applications, students will learn to design, implement, and analyze assessments that measure physical fitness, motor skills, cognitive understanding, and social-emotional learning in diverse student populations.

Repeat for Credit

N

Typically Offered

Spring

EDCI 400 - New Literacies in Contemporary Classrooms

Credits 3

This course introduces general concepts of new literacies (i.e., the skills, strategies and dispositions needed to adapt to constantly changing information and communication

technologies) along with innovative approaches to literacy instruction. In particular, the course will focus on the use of digital tools and multimodal texts to support reading comprehension, written and oral communication, visual literacy, global competence, and creative thinking/ problem solving in K-6 classrooms.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 405 - Middle-Level Education

Credits 2

This course provides an overview of the characteristics of middle schools; the social, psychological, and physical characteristics of early adolescent development; middle-level curriculum; ways to organize for instruction; and the teacher's role in the guidance of students at the middle level.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

EDCI 420 - Instructional Methodologies and Assessments for ELLs

Credits 3

Focuses on bilingual and second language acquisition theories and classroom specific instructional methodologies, and culturally responsive assessments for EL students within PreK-12 settings. Special emphasis is placed on the frameworks of teaching, learning, and assessment within diverse settings, lesson planning, cooperative learning structures, and scaffolding techniques for ELLs. Various tenets of historical as well as contemporary philosophies, approaches, methods, and strategies within the field of Bilingual Education and

Second Language Acquisition are presented. Practical tips and ideas are provided for classroom specific modifications and rigorous and meaningful transfer from instruction to culturally-embedded assessment practices within PreK-12 settings.

Repeat for Credit

N

Typically Offered

Fall or Spring

EDCI 427 - Overview of Educational Studies

Credits 3

An exploration of transition to the field of education and educational studies, identifying elements of effective transition, instruction, and support. This course identifies how our social and professional backgrounds and previous experiences affect us during the transitional process.

Note

Miss spelled "that transitional"

Repeat for Credit

N

Typically Offered

Spring

EDCI 431 - Applied Linguistics for Diverse Settings

Credits 3

This course explores the theoretical underpinnings of language acquisition and linguistics. The main emphasis of the course is on linguistic issues within bilingualism, multilingualism, translanguaging, discourse analysis, literacy development, different levels of language and their implications for instructional modifications at the classroom level.

Repeat for Credit

N

Typically Offered

Spring

EDCI 440 - Cultural and Linguistics Accommodations for Diverse Settings

Credits 3

Focuses on the fundamentals of culturally and linguistically relevant practices for today's diverse classrooms. Special emphasis is placed on ways to navigate and create culturally responsive ecologies of learning and provide meaningful core instruction and the needed accommodations for diverse learners within PreK-12 settings. Through a critical cultural lens, students will examine the historical and contemporary efforts and approaches for advocacy, inter-cultural interactions, acculturation vs. social differentiation, various diversity perspectives and initiatives, and the importance of transformative practices and critical consciousness within our schools and society.

Repeat for Credit

N

Typically Offered

Spring

EDCI 442 - Principles and Practices in Social Justice Education**Credits 3**

This course focuses on the core societal pillars of education, employment, housing, and entrepreneurship as means to advance and guarantee a socially just framework that is equitable, reachable, and sustainable for 21st-century modern society. Students will engage in positionality self-audits, build critical cultural consciousness by analyzing societal changes and transformations, develop culturally sensitive practices to question and dismantle policies surrounding bias and privilege, and challenge systemic inequities.

Repeat for Credit

N

Typically Offered

Fall or Spring

EDCI 445 - English as a Second Language Practicum PK-12**Credits 3**

As a capstone course, ESL practicum is a portfolio-based learning experience providing students a chance to showcase and highlight their theoretical perspectives regarding ESL, Bilingual Education, Second Language

Acquisition, and Cultural and Linguistic accommodations within diverse settings. This course will also ask students to make theory to practice connections as they plan modifications and adaptations for their diverse learners within PreK-12 settings.

Repeat for Credit

N

Requisites

Prerequisites: EDCI 420; EDCI 431; EDCI 440

Typically Offered

Spring

EDCI 505 - Introduction to Education Technology**Credits 3**

Examines the roles that technology, teachers, and learners may take in any educational context; ways of integrating technology into teaching and learning; and issues involved in using technology in K-12 settings.

Repeat for Credit

N

Typically Offered

Summer

EDCI 506 - Instructional Systems Design**Credits 3**

Examines ways to design instructional modules based on key principles of instructional systems design.

Repeat for Credit

N

Typically Offered

Summer

EDCI 507 - Evaluating Educational Media Products**Credits 3**

Employs project-based and collaborative learning strategies to help participants internalize vital considerations and criteria with respect to evaluating educational media

products for potential integration into teaching and learning. After being introduced to key concepts, principles, and theories related to learners and their characteristics, learning and cognition, and instructional contexts, standards, objectives, and strategies, participants work towards building their ideal instruments/tools to evaluate the potential of various educational media products to support effective teaching and meaningful learning.

Repeat for Credit

N

Typically Offered

Summer

EDCI 508 - Social/Cultural Issues in Educational Technology

Credits 3

Addresses social and cultural issues pertaining to the integration of educational and communications technologies (ECT) into teaching and learning; examines concerns relating to equitable access to ECT; explores the impact of ECT adoption and use upon diverse social/cultural groups; and addresses designing and developing culturally cognizant, appropriate, and relevant ECT.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 507

Typically Offered

Summer

EDCI 510 - Effective Communication in Educational Settings

Credits 3

This course introduces students to the theories, dynamics, and interventions for effective communication and conflict resolution within educational and/or K-12 settings and among educational stakeholders

Repeat for Credit

N

Typically Offered

Spring

EDCI 514 - Leveraging Data in Ed. Settings

Credits 3

This course offers the foundational understandings of data in education. The course introduces contemporary concepts of data, big data, and the emerging concept as well as field of study--educational data. The course covers uses of data to inform decisions and actions with an emphasis on educational data and the practice of ethically leveraging data to benefit the broad set of stakeholders, promoting equity, diversity, and inclusion in educational settings.

Repeat for Credit

N

Typically Offered

Spring

EDCI 515 - Educational Policy

Credits 3

This course offers an analytical foundation for students interested in PK-12 education and educational public policy implementation within those settings. Drawing on social science research, the course examines the strengths and limitations of various education reform initiatives at the federal, state, and local levels. We will also apply analytical concepts to school reform issues. This course is designed to introduce students to a variety of educational policy strategies aimed at improving the quality of teaching and learning in PK-12 settings. It aims to help students build a rich framework for analyzing policies of various types, both theoretically and methodologically.

Repeat for Credit

N

Typically Offered

Summer

EDCI 550 - Schooling and Popular Culture

Credits 3

An examination of the symbiotic relationship of American public schools and American popular culture. The course will consider how schools are reflected in the popular culture and how the representation of schooling in popular

culture affects public opinion, public policy, and schools themselves.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 580 - Internship in Educational Studies

Credits 6-9

The internship is the culminating experience for the Bachelor of Science degree in Educational Studies (B.S.E.S.). Depending upon student academic and career interests, and in consultation with the program advisor and the faculty advisory committee, the student will receive a placement in an appropriate public or private site to serve a professional internship.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 581 - Ethnographic Capstone Project in Rural Education

Credits 2

This project-based course will be completed during the Professional Semester. Students will explore the demographic composition of a school community in a rural setting. They will develop an individual project to demonstrate application of knowledge and skills gained throughout the Rural Education program.

Note

Admission to Professional Semester

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 582 - Ethnographic Capstone Project in Urban Education

Credits 2

This project-based course will be completed during the Professional Semester. Students will explore the demographic composition of a school community in an urban setting. They will develop an individual project to demonstrate application of knowledge and skills gained throughout the Urban Education program.

Note

Admission to Professional Semester.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 588 - Supervised Practicum for Athletic Coaches

Credits 3

Observation and coaching participation under the direction of selected coaches in public school, club, city recreation, or other nonpublic school sport settings.

Repeat for Credit

Y

Requisites

Prerequisites: EDCI 300. Co-Requisite: EDCI 301, FNDH 220

Typically Offered

Fall, Spring, Summer

EDCI 700 - Introduction to Bilingual/Dual Language Education

Credits 3

This course focuses on the history and foundations of bilingual/DL education, as well as an in-depth examination of contemporary programming models and trends in bilingual education. The dynamics of bilingualism at the individual, system, and societal levels will also be an emphasis of study.

Repeat for Credit

N

Typically Offered

Fall, Summer

EDCI 701 - Administration and Supervision of Vocational Education**Credits 2-3**

Emphasis on the duties and responsibilities of administrative and supervisory personnel responsible for the promotion, development, and coordination of comprehensive vocational-technical education programs at the local level.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDCI 702 - Curriculum, Instruction, and Assessment**Credits 3**

Develops core concepts and skills necessary for effective teaching in elementary and secondary schools. The course examines curriculum, pedagogy, and assessment techniques.

Repeat for Credit

N

Typically Offered

Summer

EDCI 703 - MAT Secondary Math Methods**Credits 3**

Principles of teaching applied to mathematics instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 704 - Science Methods and Practicum for Teaching and Learning**Credits 3**

This course addresses principles of teaching applied to science instruction in the secondary school. These principles include: motivation; organization of subject matter; lesson planning for direct, inquiry, and social/personal instructional emphases; assessment; meeting the needs of individual students; organization and management of the classroom; and methodology and materials of the secondary school science classroom.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 705 - MAT Social Studies Methods**Credits 3**

Principles of teaching applied to social studies instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 706 - MAT Secondary English/Language Arts**Credits 3**

Principles of teaching applied to language arts instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of secondary and middle schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 707 - FACS Methods and Practicum for Teaching and Learning**Credits 3**

This course focuses on the principles of teaching applied to Family and Consumer Sciences instruction; organization of subject matter, unit and lesson planning, evaluation and assessment, classroom management, motivation, learning styles, methodology and materials related to teaching Family and Consumer Sciences in the middle school and secondary classroom.

Repeat for Credit

N

Typically Offered

Fall

EDCI 708 - Business Methods and Practicum for Teaching and Learning**Credits 3**

Principles of teaching applied to business education instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 709 - Agricultural Education Methods and Practicum for Teaching and Learning**Credits 3**

Principles of teaching applied to agriculture education instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle

schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 710 - Social Foundations of K-12 Education**Credits 3**

Examines the historical, political, philosophical, economic, legal, and sociological intersections of public education in the United States of America; emphasizes freedom, democracy, truth, power, and choice as core concepts of social change and social justice.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 711 - Art Methods and Practicum for Teaching and Learning**Credits 3**

Principles of teaching applied to art instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools. Field-based experience to help the pre-professional teacher practice the incorporation of art with reading methods and demonstrate application of technology into teaching and assessment in the secondary and middle schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 712 - MAT Foreign Language Methods**Credits 3**

Principles of teaching applied to foreign language

instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Typically Offered

Fall

EDCI 714 - Reading in the Bilingual/DL Classroom

Credits 3

The course will focus on evidence based instructional literacy and reading skill development among learners in bilingual/DL programs.

Repeat for Credit

N

Typically Offered

Spring, Summer

EDCI 715 - Literacy and Diverse Learners in the Content Areas

Credits 3

An examination of contemporary literacy and diverse learners in the secondary school content areas in light of learning theory and adolescents' stages of development. Course is designed for middle level and secondary teachers.

Repeat for Credit

N

Typically Offered

Summer

EDCI 716 - Teaching Diverse Learners

Credits 3

Examines teaching in a culturally diverse society. Emphasizes historically underrepresented students, culturally and linguistically diverse learners, abilities,

exceptionalities, gender, religion, socioeconomic status, sexual orientation and preference. Additionally, this course explores environments that are healthy, respectful, supportive, and challenging for all students.

Repeat for Credit

N

Typically Offered

Summer

EDCI 718 - Introduction to Educational Technology

Credits 3

This course examines the roles that technology, teachers, and learners may take in any educational context; ways of integrating technology into teaching and learning; and issues involved in using technology in K-12 settings.

Note

Course is offered on the web.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 720 - ESL/Dual Language Methods

Credits 3

An exploration of contemporary approaches, methods, and strategies for the appropriate instruction of second language learners. Also provided is a foundational perspective on ESL/Dual Language approaches, including the communicative, cognitive, and grammatical.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Summer

EDCI 721 - Learning Strategies and Study Skills

Credits 3

An exploration of research-based strategies for empowering learners and connecting contemporary youth with the skills needed to develop mental stamina and engage in cross-disciplinary academic tasks.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing or greater.

Typically Offered

On sufficient demand

EDCI 723 - Computer Applications in Subject Areas**Credits 1-3**

Theory and practice of using computer software to enhance teaching and learning in specific subject areas. Subjects covered will vary.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

On sufficient demand

EDCI 724 - Fundamentals of Teaching Music**Credits 1**

Techniques, materials, and experiences for a variety of music classes will be examined through discovery. Furthermore, lesson plan development, writing, and implementation will be examined in detail.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 725 - Music Methods for Elementary Schools**Credits 1**

The study of the musical characteristics of children and development of appropriate curriculum, instructional materials and techniques, and related technology for teaching musical understanding, literacy, multi-cultural connections, and creative improvisation in grades K-6 instrumental, vocal, and general music.

Repeat for Credit

N

Typically Offered

Spring

EDCI 726 - Music Program in Middle and Secondary Schools**Credits 1**

Organization and administration of the comprehensive music program in middle and secondary high schools; including the study of vocal and instrumental ensemble development, as well as techniques, materials and appropriate instructional technologies.

Repeat for Credit

N

Typically Offered

Fall

EDCI 727 - Advanced Methods in Music Education**Credits 1**

Advanced instructional methods and technologies related to the teaching of music in grades preK-12 implemented through field experiences

Repeat for Credit

N

Typically Offered

Fall, Spring

EDCI 729 - Middle-Level Mathematics for Teachers**Credits 3**

This course reviews math concepts, problems and applications to help prepare teachers to pass the Middle School Mathematics Praxis Exam. The course helps teachers gain pedagogical content knowledge in relation to teaching mathematics.

Repeat for Credit

N

Typically Offered

Fall, Summer

EDCI 730 - Education of the Disadvantaged

Credits 3

Consideration of the life-space of the disadvantaged learner and its relationship to curriculum, organization, and interpersonal relationships in schools. The development of realistic, relevant goals for the teacher of the disadvantaged.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

On sufficient demand

EDCI 731 - ESL/Dual Language Linguistics

Credits 3

Explores the theoretical underpinnings of language acquisition and linguistics that educators need to understand, in order to better plan appropriately adapted curriculum and instruction for second language learners. The course encompasses problematic aspects of English language learning, the ways in which languages may differ, and certain universal aspects of languages.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Summer

EDCI 735 - Gender Implications for Education

Credits 3

Implications of the research base on sex-role stereotyping in educational institutions. Examination of resource materials, teaching strategies, and policies intended to facilitate non-sexist educational environments.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDCI 737 - Practicum in Business and Office Occupations

Credits 1-6

Related occupational or professional experiences in approved industry, school, Cooperative Extension Service, or similar agency setting under faculty supervision.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 740 - Culture and Language in Classroom Practice

Credits 3

Examines ways teachers can address diversity in their classrooms with attention to issues such as critical reflection on practice; effective collaboration with families; diversification of the learning environment; use and adaptation of the grade-level curriculum; the differentiation of classroom instruction for cultural and linguistic diversity; and advocacy skill development

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

EDCI 742 - ESL/Dual Language Assessment

Credits 3

An in-depth examination of key issues/challenges in the appropriate language assessment of culturally and linguistically diverse students. Among focal topics in theory, research and practice discussed will be: pre-and post-instructional assessment, authentic and alternative assessment, language testing and placement for programming in ESL/Dual language classrooms.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring, Summer

EDCI 745 - ESL/Dual Language Elementary Practicum

Credits 3

The practicum is a portfolio-based experience providing the student with application experiences in ESL/Dual Language methods, assessment, and multicultural competence as well as the opportunity to demonstrate understanding of second language acquisition. Students will be required to spend 60 hours in a school setting where they can practice and implement ESL/BE lessons/methodology.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 720, EDCI 731, EDCI 742, and EDCI 733 or EDCI 740.

Typically Offered

Fall, Spring

EDCI 746 - ESL/Dual Language Secondary Practicum

Credits 3

The practicum is a portfolio-based experience providing the student with application experiences in ESL/Dual Language methods, assessment, and multicultural

competence as well as the opportunity to demonstrate understanding of second language acquisition. Students will be required to spend 60 hours in a school setting where they can practice and implement ESL/BE lessons/methodology.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 720, EDCI 731, EDCI 742, and EDCI 733 or EDCI 740.

Typically Offered

Fall, Spring

EDCI 755 - Multicultural Issues in Teaching

Credits 3

Examines the socio-cultural forces that influence the American educational system. Considers curriculum and instruction implications of human differences, and analyzes ways to promote equitable, quality education.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Fall

EDCI 756 - Tradebooks Across the Curriculum

Credits 3

This course examines the use of children's literature in the K-8 literacy classroom. It focuses on recently published books in several literary genres across curricular areas.

Repeat for Credit

N

Typically Offered

Spring, Summer

EDCI 758 - Reading/Writing Connections

Credits 3

This course examines teaching language arts in an integrated manner, exploring the relationships between reading and writing from a developmental perspective. Teaching methods for a holistic environment are highlighted.

Repeat for Credit

N

Typically Offered

Summer

EDCI 760 - Action Research in Education

Credits 3

This course introduces the theoretical and practical dimensions of school-based action research about curriculum and instruction topics, and students conduct an action research project. Access to the research site is required.

Repeat for Credit

N

Typically Offered

Fall

EDCI 764 - Engineering Design Practices in Secondary Science Teaching

Credits 3

This course prepares secondary science teachers to integrate engineering design practices at the same level as scientific inquiry in alignment with the Next Generation Science Standards (NGSS). Integration of practices in the curriculum is required for licensure in science disciplines. Evidence of proficiency includes instructional design, assessment, evaluation, and practicum experiences. Emphasis is placed on specifying criteria and constraints for acceptable solutions; generating and evaluating multiple solutions; building and testing prototypes; and optimizing solutions through an iterative process.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 765 - Contemporary Pedagogies for Teaching Computer Science

Credits 3

This course provides a knowledge base of computer science teaching practices addressing, diversity, equity, and inclusion, problem-based instruction, engineering design, assessment, and feedback. Focused activities address the twelve research-based principals of teaching and learning computing as identified by the National Centre for Computing Education. The course will introduce PBL strategies such as concept mapping, learning graphs, code tracing, parson's problems, and modeling.

Repeat for Credit

N

Typically Offered

Summer

EDCI 768 - Teaching Computer Science in Elementary Schools

Credits 3

Using block-coding students will participate in activities designed according to the research-based principles developed by the Raspberry Pi Foundation and the National Centre for Computing Education. Focus is placed upon developing concepts around variable, expressions, loops, and abstraction (VELA). Students will utilize a variety of unplugged activities to teach computing concepts. Students will also convert these activities into powerful lessons and units focused on real world examples of computing in our society.

Repeat for Credit

N

Typically Offered

Fall

EDCI 769 - Teaching Computer Science in Secondary Schools

Credits 3

The course will provide participants with the knowledge and ability to develop coding-based units for grades 7-12 which focus on coding in both block and text-based languages. Using Scratch (block coding) and either java or python (text coding) students will develop lessons and units which are designed according to the research-based principles developed by the Raspberry Pi Foundation and the National Centre for Computing Education.

Repeat for Credit

N

Typically Offered

Fall

EDCI 770 - Advanced Approaches in World Lang Ed**Credits 3**

The study of contemporary approaches, methods, and research-based best practices for world language instruction. Provides a venue to analyze and discuss programmatic and curricular decisions and how that impacts teaching and learning.

Repeat for Credit

N

Requisites

Prerequisite: EDSEC 540 and EDSEC 541.

Typically Offered

On sufficient demand

EDCI 771 - Assessment in World Language Education**Credits 3**

The course will study how to create, implement, and analyze world language assessments to enhance instruction and support learning

Repeat for Credit

N

Requisites

Prerequisite: EDCI 770

Typically Offered

Fall, Spring, Summer

EDCI 772 - Current Trends and Research in World Language Education**Credits 3**

Analyze current trends in world language education. Recent research will be stressed. Explore how

this applies to curricular and instructional decisions.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 773 - Contemporary Technology in World Language Education**Credits 3**

The course will study the pedagogical implications of instructional technologies to enhance and support world language education. There will be a focus on the constant evolution of technology and how it can enhance the teaching and learning of world language education.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 775 - Readings in Curriculum and Instruction**Credits 1-3**

Readings in research and application in specialized areas in education.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

EDCI 776 - Teaching in Middle Schools**Credits 3**

Several instructional approaches consistent with the characteristics of the emerging adolescent student (grades 5-9) will be examined in relation to current research. Direct development of alternative curricular programs. Appropriate use of interdisciplinary activities and nontraditional materials will be emphasized.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315.

Typically Offered

On sufficient demand

EDCI 779 - Primary School Education**Credits 3**

A course for those interested in the kindergarten and primary school child. Emphasis will be placed on curriculum development, pertinent research, and innovative practices in early education.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Summer

EDCI 781 - Teaching the Theoretical Foundations of Constitutional Government**Credits 1**

Examines the theories (e.g., natural rights, classical republicanism, and constitutionalism) and theorists (e.g., Aristotle, Locke, Hobbes, and Montesquieu) that most influenced constitutional thinking in the United States. Explores how to teach effectively about these theories and theorists.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 782 - Teaching the Historical Origins of Constitutional Government**Credits 1**

Examines seminal ideas, documents, and events in the

creation of the United States Constitution such as problems with the Articles of Confederation, the characteristics of good government, the debates at the Philadelphia Convention, the Federalist Papers, and the Antifederalist Papers. Explores how to teach effectively these ideas, documents, and events.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 783 - Teaching the Development of Constitutional Principles**Credits 1**

Examines the development of political ideas and constitutional thinking since the Founding. Focuses on how the Bill of Rights, the amendment process, judicial review, and the Fourteenth Amendment are used to empower and limit government. Explores how to teach effectively about developments in constitutional thought.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 784 - Teaching the Institutions of Government**Credits 1**

Examines the powers, limits, and development of political institutions such as Congress, the President, the Supreme Court, and political parties. Explores how to teach effectively about these institutions.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 785 - Teaching the Bill of Rights**Credits 1**

Examines the rights protected by the United States

Constitution and the ways that rights empower citizens, limit government, and contribute to constitutional government. Explores how to teach effectively about rights.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 786 - Topics in Curriculum and Instruction

Credits 1-3

Examination of current topic in area of specialization of faculty.

Note

Varied topics offered each semester so course may be repeated.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

EDCI 787 - Teaching Citizenship

Credits 1

Examines development of the rights, responsibilities, and challenges of citizenship in the United States. Explores how teach effectively about citizenship.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 788 - Teaching the Constitutional Principles of America's Founders.

Credits 3

Develops constitutional principles; explores perspectives of constitutional interpretation, change, and preservation;

raises questions about the immediate and enduring significance of America's founding principles and documents; and introduces sound pedagogical practices to teach about them.

Repeat for Credit

N

Typically Offered

Fall

EDCI 789 - Methods and Materials in Civic Education

Credits 3

Focuses on the pedagogical aspects of civic education and engagement such as research-based approaches to concept attainment, skill development, discussion, and deliberation as well as analysis of curriculum materials and programs that apply these pedagogies.

Repeat for Credit

N

Typically Offered

Spring

EDCI 790 - Engaged Citizens: Public Policy Issues and Processes

Credits 3

Examines the teaching of the workings of constitutional government through the lens of the public policymaking processes and the roles of individual voters, organized publics, the media, and state and local governments in that process.

Repeat for Credit

N

Typically Offered

Summer

EDCI 791 - Teaching Science and Mathematics in the Elementary School

Credits 4

Develops knowledge, skills, and dispositions to effectively teach elementary science and mathematics. Introduces

content, methods, and materials. Explores curriculum integration.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 702

Typically Offered

Fall, Spring, Summer

EDCI 792 - Teaching Social Studies, Reading, and Literacy in the Elementary School

Credits 4

Develops knowledge, skills, and dispositions to effectively teach elementary social studies, reading, and language arts. Introduces content, methods, and materials. Explores curriculum integration.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 702

Typically Offered

Fall

EDCI 793 - Teaching Health, Movement, and Fine Arts in Elementary Schools

Credits 4

Develops knowledge, skills, and dispositions to effectively teach health, movement, and fine arts. Introduces content, methods, and materials. Explores curriculum integration.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 702

Typically Offered

Spring

EDCI 794 - Advanced Methods of Teaching

Credits 3

Examines popular theories, important principles, research-based strategies, and best practices associated with effective teaching. Provides a venue to apply theory to practice; connect ideas and actions; and link content and pedagogy.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 795 - Problems in Curriculum and Instruction

Credits 1-18

Independent study of a specific problem in curriculum or instruction.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCI 796 - Brain-Based Literacy Instruction

Credits 3

This course provides advanced study of theory and research regarding literacy acquisition related to brain development and function. The intended audience includes K-12 regular classroom teachers, reading teachers, resource room teachers, teacher aides, and other professionals concerned with meeting the literacy needs of children and young adults. The following topics are covered in the course: Cognitive functions, memory systems, sensitive/ critical periods for brain development related to literacy, implications for classroom environment and stress upon student performance, executive functions and research-based instructional strategies found to increase student performance.

Repeat for Credit

N

Typically Offered

On Sufficient Demand

EDCI 797 - Secondary Content Field Colloquium I

Credits 2

This course is designed to explore key concepts within the secondary content field. Focus will be on advancing the development of disciplinary content knowledge and pedagogical content knowledge.

Repeat for Credit
N

Typically Offered
Summer

EDCI 798 - Secondary Content Field Colloquium II

Credits 2

This course is designed to explore additional key concepts within the secondary content field. Focus will be on advancing the development of disciplinary content knowledge and pedagogical content knowledge.

Repeat for Credit
N

Typically Offered
Fall

EDCI 799 - Secondary Content Field Colloquium III

Credits 2

Class explores the content knowledge of the candidate in regards to the middle and secondary content curriculum, identifies areas of strength and weakness in content knowledge, and provides enrichment and remediation to prepare the candidate for the internship experience.

Repeat for Credit
N

Typically Offered
Intersession

EDCI 800 - Teaching Practicum

Credits 1-6

Participate in supervised field experience in K-12 schools. Apply principles of curriculum, instruction, and assessment to plan, teach, and reflect.

Repeat for Credit
N

Typically Offered
Fall

EDCI 801 - Internship in K-12 Schools

Credits 1-4

Supervised experience teaching in discipline-specific K-12 school classrooms.

Note
Instructor permission.

Repeat for Credit
Y

Typically Offered
Fall, Spring

EDCI 803 - Curriculum Development

Credits 3

An overall view of the entire school curriculum, patterns of organization, outlining of instructional fields, and specific helps in curriculum development for administrators and classroom teachers.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

EDCI 812 - History of Education

Credits 3

The history of education is explored critically through multiple perspectives. Complex forces governing changes in education are exposed--forces that are felt but unseen. By studying historical contexts, much about schooling today is seen as problematic and open to question--not as inevitable. This study pushes past a passive acceptance of

the status quo via a vigorous, fresh analysis.

Repeat for Credit

N

Typically Offered

Spring

EDCI 813 - Comparative Philosophies of Education

Credits 3

Philosophical thought in education is examined critically through multiple perspectives. The learning environment, the role of the learner, and the role of the teacher are issues central to analysis in the course as they manifest themselves in learning and teaching for social change and social justice. The questions of what are freedom, democracy, truth, power, and choice are central to the examination.

Repeat for Credit

N

Typically Offered

Fall

EDCI 814 - Understanding and Teaching Reading

Credits 3

Foundational issues in K-12 reading instruction. Focus on the reading process, the nature of the learner, the text, and the instructional setting.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 816 - Approaches to Literacy Instruction

Credits 3

A foundational study of research-based approaches, materials, and methods for effective K-12 literacy instruction.

Repeat for Credit

Y

Typically Offered

Summer-Odd Years

EDCI 818 - Theoretical Models of Literacy

Credits 3

Advanced study of reading with an emphasis on foundational theories and seminal research studies reflecting the complexity of the literacy process.

Repeat for Credit

Y

Typically Offered

Summer-Odd Years

EDCI 820 - Contemporary Issues in Language Arts

Credits 3

An analysis of current methods, issues, and trends in teaching, speaking, listening, and writing through the study of significant literature and research findings.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 821 - Advanced Methods in the Teaching of K-12 Mathematics

Credits 3

Advanced study of selected topics in K-12 mathematics emphasizing new programs, trends, controversial topics, and new recommendations for persistent problems; findings of recent research stressed.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 823 - History of Mathematics Education

Credits 3

This course will examine the issues and forces behind the evolution of mathematics education reform from 1820-present. Historical readings, mathematics curricula, analysis of political and social change, and research in both psychology and mathematics education will be analyzed to establish a foundation for understanding current reform efforts.

Repeat for Credit

N

Typically Offered

Fall

EDCI 825 - Research in Mathematics Teaching and Learning**Credits 3**

This course will focus on seminal and contemporary research in mathematics teaching and learning. Emphasis will be placed on current trends in K-12 classrooms, the relationship between curriculum and instruction to current mathematics education research, critical analysis of research practices, solving and analyzing problems, and designing goals and outcomes for instructional strategies.

Repeat for Credit

N

Typically Offered

Summer

EDCI 826 - Contemporary Technologies in Mathematics Education**Credits 3**

The purpose of this class is to explore the theoretical implications of using technology as a tool for teaching mathematics in K-12 classrooms. The course content will focus on the continual evolution of technology and how this evolution can assist in the teaching and learning of mathematics.

Repeat for Credit

N

Typically Offered

Fall

EDCI 827 - Theoretical Models of Mathematics Teaching and Learning**Credits 3**

This course will focus on the theories of learning, which provide a foundation for the standards for mathematical practice. The course will specifically address historical and contemporary theories related to mathematics teaching and learning.

Repeat for Credit

N

Typically Offered

Spring-Even Years

EDCI 828 - Assessment in Mathematics Education**Credits 3**

This course will provide participants with assessment tools necessary to enhance learning for diverse student populations. The course will explore ways to document student performance and progress for instructional and accountability purposes. Participants will become familiar with quantitative and qualitative concepts and practices used to evaluate student learning in the classroom.

Repeat for Credit

N

Typically Offered

Summer-Even Years

EDCI 830 - Contemporary Issues in Family and Consumer Sciences Education**Credits 3**

Advanced study of evolving trends and materials for Family and Consumer Sciences programs; application to teaching and curriculum.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: EDSEC 621 and teaching experience.

Typically Offered

Summer

EDCI 831 - Contemporary Issues in Teaching and Learning**Credits 3**

Advanced study of selected topics and contemporary issues in curriculum and instruction emphasizing new programs, trends, instructional strategies, and curricular issues. Findings of recent research are stressed.

Repeat for Credit

Y

Typically Offered

Spring, Summer

EDCI 834 - Improving Science Teaching**Credits 3**

Evaluation and implementation of psychological and philosophical foundations will be stressed in improving K-12 science teaching.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 835 - Supervision of Student Teaching**Credits 3**

Organization and functions of student teaching programs; orienting, supervising, and evaluating student teachers in elementary and secondary schools.

Repeat for Credit

N

Typically Offered

Spring

EDCI 840 - Literacy Assessment**Credits 3**

An overview of the collection, analysis, and interpretation

of data from formal and informal assessment methods and instruments to enhance literacy instruction by documenting growth and literacy development.

Repeat for Credit

Y

Typically Offered

Fall

EDCI 841 - Striving Literacy Learners**Credits 3**

Explores the identities of "striving literacy learners" across grade levels to address the importance of interest, motivation, gender, culture, and language on learning to read with an emphasis on differentiated instruction to support literacy development and lifelong reading.

Repeat for Credit

Y

Typically Offered

Spring

EDCI 845 - ELD/Dual Language Methods**Credits 3**

This course is an exploration of contemporary approaches, methods, and strategies for the appropriate instruction of second language learners. The course examines the theories of Second Language Acquisition and the need to consider the biographies of students within the scope of classroom teaching and learning. Also explores foundational perspectives on EFL/dual language approaches, including the communicative, cognitive, and grammatical.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 846 - ELD/Dual Language Culture and Language in Classroom Practice**Credits 3**

This course examines the many ways in which school educators may build the capacities for cultural and linguistic diversity in the classroom. Special emphasis is

placed upon readiness for mutually accommodative professional practices with *culturally and linguistically diverse* [CLD] students and families in the following areas: foundations of culture and language; critical reflection on practice; maximizing the assets that CLD students and families bring to learning; school and classroom ecology; curriculum conscientiousness; the differentiation of instruction for cultural and linguistic diversity; and a framework for advocacy in practice.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 847 - ELD/Dual Language Assessment

Credits 3

This course provides an overview of current issues regarding the assessment of CLD students within classroom practice. Examines pre-instructional student assessment; the acculturation process and asset discovery; issues of language proficiency beyond the measurements; focus on pre-assessment, formative, and summative assessment; using interactive grouping configurations and learning strategies as an integral part of the assessment process; assessments for students in special education settings.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDCI 858 - Online Course Design Project/e-Portfolio

Credits 2

The portfolio as a professional development tool is developed using Association for Educational Communications and Technology standards. An online instructional design course project with assessment is developed and placed on an e-portfolio website.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to Digital Teaching and Learning Specialty.

Typically Offered

Fall, Spring, Summer

EDCI 862 - Instructional Systems Design

Credits 3

This course examines ways to design instructional modules based on key principles of instructional systems design.

Note

Graduate Level Course

Repeat for Credit

N

Requisites

Prerequisite: EDCI 718 or equivalent course

Typically Offered

Fall

EDCI 863 - Online Teaching and Learning

Credits 3

This course examines ways to design and develop online instructional modules based on key principles of instructional systems design.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 718 or equivalent course and EDCI 862 or equivalent course

Typically Offered

Spring

EDCI 864 - Social/Cultural Issues in Educational Technology

Credits 3

This course addresses social and cultural issues pertaining to the integration of educational and communications technologies (ECT) into teaching and learning; examines concerns relating to equitable access to ECT; explores the impact of ECT adoption and use upon diverse social/cultural groups; and addresses designing and developing culturally cognizant, appropriate, and relevant

ECT.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 718 or equivalent course.

Typically Offered

Summer

EDCI 866 - Educational Technology Change Management

Credits 3

This course introduces participants to the knowledge and skills needed to become agents of positive technological change within their workplaces. Topics covered include diffusion of innovations, needs assessment, change management, systemic change, human performance technology, socio-cultural cognizance, and inclusion/equity.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 718 or admission into the Ed.D. program

Typically Offered

Summer

EDCI 871 - World Language Education Practicum

Credits 3

Participate in a supervised field experience in a PK-12 world language classroom. Apply the principles of best practice in world language curriculum and instruction planning, instruction, assessment, and reflection.

Repeat for Credit

N

Requisites

Corerequisites: EDCI 770, EDCI 771, EDCI 772, EDCI 773

Typically Offered

Fall, Spring, Summer

EDCI 874 - The Mathematics Curriculum

Credits 3

Historical and current trends and influences in mathematics curriculum. Analysis of research on teaching, learning, and assessment in mathematics education.

Requisites

Prerequisite: Teaching experience.

Typically Offered

On sufficient demand

EDCI 876 - The Social Studies Curriculum in the Secondary School

Credits 3

New trends, materials, and ideas in teaching K-12 social sciences, based on recent research and experimental programs.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 878 - The Language Arts Curriculum

Credits 3

The changing scene in the teaching of English: trends, materials, and ideas in literature, composition, and grammar that have emerged from recent research and discovery.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 882 - Teaching and Learning Models

Credits 3

Advanced study of ways to organize the curriculum, instructional strategies, and the teaching environment to promote learning. Various models of teaching are analyzed and critiqued.

Repeat for Credit

Y

Typically Offered

Fall

EDCI 886 - Seminar in Curriculum and Instruction**Credits 1-18**

Intensive discussion of research or problems of current professional interest based on study of pertinent original literature.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 887 - Educational Technology Proseminar I**Credits 3**

Examines contemporary issues related to the role of technology in teaching and learning. Topics covered reflect current theory, research and practice within the discipline of educational technology. This is the first of a two-course sequence examining a wide range of issues; the second course is EDCI 888.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 718 or equivalent course

Typically Offered

Fall

EDCI 888 - Educational Technology Proseminar II**Credits 3**

Examines contemporary issues related to the role of technology in teaching and learning. Topics covered reflect current theory, research and practice within the discipline of educational technology. This is the second of a two-

course sequence examining a wide range of issues; the first course is EDCI 887.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 718 or equivalent course

Typically Offered

Spring

EDCI 890 - Master's Project**Credits 1-6**

Students select and prepare a project designed to improve their professional practice. It may be the construction of a professional portfolio or project to represent the student's learning throughout the master's degree program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCI 898 - Master's Report**Credits 1-18**

A master's report is generally shorter than a thesis and presents the results of a more limited original investigation or a problem or topic within the student's classroom or educational field approved by the candidate's supervisory committee.

Note

Permission by department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCI 899 - Master's Thesis**Credits 1-18**

A master's thesis presents the results of an original investigation or a problem or topic within the student's classroom or educational field approved by the candidate's

supervisory committee.

Note

Permission by department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDCI 900 - Introduction to Ed.D. Doctoral Studies

Credits 3

This course guides Ed.D. students in becoming acclimated to doctoral studies and research. Students are engaged in discussion and dialogue about the purpose of doctoral studies in education, as well as the responsibilities associated with doctoral studies and research: academic integrity, research ethics, and inclusive learning environment. Specifically, students explore doctoral studies as a way to transform ideas, epistemologies, and theories into praxis for addressing problems of practice and policy in schools.

Repeat for Credit

N

Typically Offered

Summer

EDCI 901 - Literature Reviews for Doctoral Research

Credits 3

This course explores the purpose and development of literature reviews in educational research. Students learn methods of engaging, organizing, and synthesizing literature. Students examine different theoretical frameworks and think about how certain theories can be used to address their problems of practice and policy in schools. Students will begin reviewing literature for doctoral research.

Repeat for Credit

N

Typically Offered

Summer

EDCI 907 - Curriculum Theory

Credits 3

Theoretical concepts underlying significant curriculum developments. A systematic critique of current curricular theory. Consideration of model generation.

Repeat for Credit

Y

Typically Offered

Fall

EDCI 910 - Multicultural Curriculum Programming

Credits 3

Application of multicultural curriculum principles to total school programming with particular emphasis on the cultural pluralism phenomenon. Includes analytic review of instruments on multicultural/multiracial curriculum evaluation as well as planning skills for equitable thrusts. Primarily involves elementary and secondary focus with some attention to postsecondary programming.

Repeat for Credit

Y

Typically Offered

Fall, Summer

EDCI 912 - Historical Research Methods in Education

Credits 3

Historical research is the contextual link of the past to the present. Offering new perspectives and analyses, this course is an introduction to the methodology of historical research in education and an introduction to historical writing about educational issues. A historical research paper/project is the culminating experience.

Repeat for Credit

N

Typically Offered

Fall-Even Years

EDCI 913 - Inquiry I – Statistical Analysis in Curriculum and Instruction

Credits 3

Introduction of statistics and statistical analyses in educational research. Covers a wide range of descriptive and inferential statistics. Focuses on understanding concepts and processes of statistics and interpreting the results based on educational research data. First in a two-course sequence.

Repeat for Credit

N

Typically Offered

Fall

EDCI 914 - Inquiry II – Qualitative Research in Curriculum and Instruction

Credits 3

Focus on acquiring methodological skills used to conduct qualitative research; collecting data using field notes, interviews, observations, and documents; analysis and interpretation of data; and communicating results of qualitative data in writing.

Repeat for Credit

N

Typically Offered

Spring

EDCI 915 - Inquiry III - Program Evaluation for Curriculum and Instruction

Credits 3

Introduction to basic concepts of program evaluation and tools commonly used to evaluate educational programs and activities. Explores different evaluation designs, quantitative and qualitative methodologies commonly used in assessment and evaluation, and skills required to be a critical reader of evaluations.

Repeat for Credit

N

Requisites

Prerequisite: EDCEP 816

Typically Offered

Fall

EDCI 917 - Inquiry IV - Advanced Quantitative Methods in Curriculum & Instruction

Credits 3

Advanced examination of statistics and statistical analyses in educational research. Focus on transition from learning statistics to using and presenting statistics.

Repeat for Credit

N

Typically Offered

Spring

EDCI 918 - Inquiry IV - Advanced Qualitative Methods in Curriculum & Instruction

Credits 3

Critical consideration of recent research in designated fields. Emphasis on case study research methods.

Repeat for Credit

N

Typically Offered

Spring

EDCI 920 - Narrative Inquiry in Education

Credits 3

This course examines theoretical underpinnings of narrative inquiry, narrative analysis, narrative data collection, narrative writing, and contemporary narrative research issues in education.

Repeat for Credit

N

Requisites

Prerequisite: EDLEA 838.

Typically Offered

Other

EDCI 930 - Leadership in Literacy

Credits 3

A seminar to prepare reading professionals to work as literacy leaders, advocates, and coaches to support district and school literacy professional development.

Repeat for Credit

Y

Typically Offered

Summer-Even Years

EDCI 943 - Principles of College Teaching**Credits 3**

Principles of learning, learning theory, educational objectives, methods and techniques, college students, and evaluation in the classroom. Emphasis upon preservice and in-service help in improving instruction at the college level.

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDCI 945 - Clinical Practicum in Reading**Credits 3**

Supervised K-12 practicum with candidates working with individuals and small groups of readers using a wide range of evidence-based instructional practices, approaches, and curricular materials.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 816, EDCI 818, EDCI 840, and EDCI 841. Prior or concurrent enrollment in EDCI 930.

Typically Offered

Summer

EDCI 972 - Advanced Study of the Literary Process**Credits 3**

Survey of selected theories of literacy processes. Investigation of the interrelationships of the literacy

performance: cognitive processes; language; social-emotional factors; and experience. Emphasis upon recent developments in the field.

Requisites

Prerequisite: EDCI 816.

Typically Offered

Spring-Odd Years

EDCI 975 - Internship in Reading**Credits 1-4**

Professional field experience for candidates to demonstrate expertise by supporting reading development, analyzing building and district needs, developing action plans, and conducting related professional development.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 945.

Typically Offered

Fall, Spring

EDCI 986 - Advanced Seminar in Curriculum and Instruction**Credits 1-18**

These seminars will critically consider recent research in the designated fields. The emphasis will be upon individual studies and small group interaction. Enrollment is restricted to those students who have been admitted to the doctoral program in education and who have completed substantial amounts of graduate study in the designated fields.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDCI 991 - Internship in Curriculum and Instruction**Credits 1-18**

Studies of and field experiences in the development of

programs in cooperating schools and educational or related agencies under the supervision of College of Education graduate faculty members. A maximum of 6 credit hours may be chosen from the areas listed.

Repeat for Credit

Y

Requisites

Prerequisite: Only TELRN non-licensure track students and Ed.D. students may enroll in EDCI 991 and/or list EDCI 991 on their Program of Study. Permission of department head.

Typically Offered

Fall, Spring, Summer

EDCI 999 - Research in Curriculum and Instruction

Credits 1-18

Doctoral research demonstrates the candidate's ability to conduct significant original research related to curriculum and instruction, to analyze the information obtained from the research, and to present the results in a dissertation format appropriate to the educational field.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDEL 250 - Health and Movement Education in Elementary Classrooms

Credits 2

Addresses major concepts of health education, human movement, and physical activities to enable elementary teachers to promote healthy lifestyles for all students in their instruction.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDEL 270 - Arts for Elementary Schools

Credits 3

Methods, materials, and educational philosophy of the fine arts for elementary school teaching. Students will explore art and design media, techniques, and concepts including drama, movement, music, and visual arts. Emphasis will be placed on designing, implementing, and evaluating arts experiences.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

EDEL 410 - Block B Practicum: K-6

Credits 2

A field experience designed to give students opportunities in applying teaching methods in literacy and science in elementary grades. Includes using technologies to enhance instruction and facilitate professional productivity.

Note

Field experience 30 credit hours; Lecture/Lab 12 credit hours.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320 Corequisite: EDEL 411.

Typically Offered

Fall, Spring

EDEL 411 - Science of Reading I

Credits 3

Provides an evidence-based approach to teaching the science of reading in the primary grades focusing on five areas: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Topics include how the brain learns to read, essential components of structured literacy, and the research behind practices that support literacy skills and language development. Addresses literacy assessment, instructional strategies, and resources for teaching decoding, language comprehension, and reading

comprehension to meet the needs of all students.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDEL 410.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

EDEL 412 - Teaching Science: PK-6

Credits 3

An introduction to the principles and methods of teaching science in elementary grades, including the nature of science, student learning, curriculum, instructional methods and activities, equity issues, and student assessment. Includes using technologies to enhance instruction and facilitate professional productivity.

Repeat for Credit

N

Requisites

Corequisite: EDCI 320

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

EDEL 413 - Classroom Assessment: PK-6

Credits 1

Examines the role of assessment in elementary classrooms in teaching; characteristics of high-quality assessments; diagnostic, formative, and summative assessments; preparation of classroom tests and test items; performance and portfolio assessments; affective traits; assessment of students with special needs and characteristics; grading and reporting; and standardized tests.

Repeat for Credit

N

Requisites

Corequisite: EDCI 200 and Admission to Teacher Ed

Typically Offered

Fall, Spring

EDEL 414 - Teaching Culturally and Linguistically Diverse Learners

Credits 3

Examines multicultural education and the characteristics of diverse learners in the classroom, including culturally and linguistically diverse learners. Curricular and instructional implications of these differences are examined in an effort to differentiate instruction to meet the needs of all learners.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education. Corequisite: EDCI 320

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

EDEL 415 - Teaching Methods for Mathematics, PK-2

Credits 3

Focuses on teaching mathematics in the elementary school, grades PK-2. Topics include: reform movements in math education, effective learning environments, students' and teachers' views and experiences with mathematics, pedagogy of major mathematical concepts, and the nature of mathematical and reasoning processes.

Note

Intended to be required for all undergraduate elementary education majors.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320

Typically Offered

Fall or Spring

EDEL 450 - Art Methods for Elementary Schools**Credits 3**

Principles of teaching applied to art instruction in elementary schools including: motivation, child-development and mark making, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of elementary school art.

Repeat for Credit

N

Requisites

Prerequisite: Admission to Teacher Education, EDART Teaching field.

Co-requisite: EDEL 451.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

EDEL 451 - Art Practicum for Elementary Schools**Credits 1**

Field-based experience to help the pre-professional teacher practice the incorporation of art methods, strategies, and techniques in teaching and assessment in the elementary school.

Repeat for Credit

N

Requisites

Prerequisite: Admission to Teacher Education, EDART Teaching Field.

Co-requisite: EDEL 450.

Typically Offered

Spring

EDEL 460 - Block C Practicum: K-6**Credits 2**

A field experience designed to give students opportunities in applying teaching methods in literacy, social studies, and mathematics in elementary grades. Includes using technologies to enhance instruction and facilitate professional productivity.

Repeat for Credit

N

Requisites

Prerequisite: EDEL 410 and EDEL 411.

Typically Offered

Fall, Spring

EDEL 461 - Science of Reading II**Credits 3**

Extends an evidence-based approach to teaching the science of reading in the intermediate grades building on five areas: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Topics include orthography, morphology, essential components of structured literacy, and the research behind practices that support literacy skills. Addresses literacy assessment, instructional strategies, and resources for teaching writing, language comprehension, and reading comprehension to meet the needs of all students.

Repeat for Credit

N

Requisites

Prerequisite: EDEL 410, EDEL 411. Corequisite: EDEL 460.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

EDEL 462 - Teaching Social Studies: K-6**Credits 3**

Methods and resources for teaching social studies in elementary grades with the goal of helping students develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally

diverse, democratic society in an independent world. Includes using technologies to enhance instruction and facilitate professional productivity.

Repeat for Credit

N

Requisites

Corequisite: EDEL 460

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

EDEL 463 - Teaching Mathematics: K-6

Credits 3

The teaching of mathematics in elementary grades, including the nature of mathematical processes, curriculum, methods of instruction, instructional materials, and the evaluation of outcomes. Includes using technologies to enhance instruction and facilitate professional productivity.

Repeat for Credit

N

Requisites

Corequisite: EDEL 460.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

EDEL 464 - Classroom Management and Discipline: PK-6

Credits 1

Examines ways to establish and maintain a positive learning environment in elementary classrooms and specific strategies to address misbehavior. Emphasis is placed on creating an effective management system, establishing a positive learning environment, addressing individual and group motivation, and preparing to deal with misbehavior.

Repeat for Credit

N

Requisites

Prerequisite: Admission to Teacher Ed and EDCI 200

Typically Offered

Fall, Spring

EDEL 465 - Teaching Methods for Mathematics, Grades 3-6

Credits 3

Mathematics pedagogy for the elementary school, grades 3-6. Topics include: effective learning environments, teaching major mathematical concepts, formative and summative assessment, classroom discourse, and connecting mathematics to students' lived experiences.

Note

Intended to be required for all undergraduate elementary education majors.

Repeat for Credit

N

Requisites

Prerequisite: EDEL 415

Typically Offered

Fall or Spring

EDEL 466 - Supporting Elementary Learners in Reading and Math, Grades PK-6

Credits 3

Designed to equip future elementary educators to support elementary learners in developing strong foundational skills in reading and mathematics, particularly for students who are exceptional, diverse, and at risk. Topics include: Structured Literacy, the Science of Reading, Multi-Tiered Systems of Support (MTSS), and Response to Intervention (RTI) strategies within the context of diverse learners in the regular education classroom.

Note

Intended to be required for all undergraduate elementary education majors.

Repeat for Credit

N

Requisites

Prerequisites: EDEL 415, EDEL 411

Typically Offered

Fall, Spring

EDEL 467 - Teaching Methods for STEAM, PK-6**Credits 3**

Integrating pedagogical and disciplinary knowledge needed to deliver high-quality STEM/STEAM education in the elementary classroom. Real-world experiences related to key concepts in the Next Generation Science Standards (NGSS) and other content-area standards through inquiry-based, problem-based, and/or phenomena-based approaches.

Note

Intended to be required for all undergraduate elementary education majors.

Repeat for Credit

N

Requisites

Prerequisite : EDEL 320, EDEL 412

Typically Offered

Fall or Spring

EDEL 490 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Note

Requires consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDEL 502 - Independent Study in Elementary Education**Credits 1-3**

Selected topics in professional education. Maximum of 3 hours applicable toward degree requirements.

Note

Consent of department chair.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDEL 520 - Physical Education/Health Methods for PK-6 Schools**Credits 3**

This class includes both theoretical and practical guidelines for analysis and implementation of children's physical education/health. The course focuses on applications of the Kansas standards for elementary educators PK-6 grades.

Repeat for Credit

N

Requisites

Prerequisite: Admission to Teacher Education and corequisite: EDCI 320, EDEL 521.

Typically Offered

Spring

EDEL 521 - Physical Education/Health Practicum for PK-6 Schools**Credits 1**

This course will provide an opportunity for students to plan, teach, and evaluate Physical Education/Health lessons within a placement at the PK-6 school level.

Repeat for Credit

N

Requisites

Corequisite: EDEL 520.

Typically Offered

Spring

EDEL 585 - Teaching Internship in Elementary School

Credits 1-15

Observation and teaching participation under the direction of selected elementary teachers.

Note

Admission to Professional Semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDEL 620 - Foreign Language Elementary School Methods

Credits 3

Methods of teaching and organization for the foreign language program in the elementary school. A score of "2" or "Advanced" on the Oral Proficiency Interview (OPI) is required.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320 Corequisite: EDEL 621

Typically Offered

Spring

EDEL 621 - Foreign Language Elementary School Practicum

Credits 1

A teaching experience to apply the methods of teaching and organization for the foreign language program in the elementary school.

Repeat for Credit

N

Requisites

Corequisite: EDEL 620

Typically Offered

Spring

EDLEA 502 - Independent Study in Educational Leadership

Credits 1-3

Selected topics in professional education.

Note

Consent of department chair.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDLEA 710 - Fundamental Histories and Philosophies in Indigenous Education

Credits 3

Examines the history of education with Indigenous populations in both Eurocentric and non-Eurocentric contexts. Includes: examining Indigenous knowledges found outside of what is considered mainstream education, critical Indigenous philosophies and frameworks from Indigenous scholars in the academy, the foundations of Native sovereignty in the United States, and pedagogical approaches within Eurocentric and non-Eurocentric spaces.

Repeat for Credit

N

Typically Offered

Summer

EDLEA 720 - Self-Determination, Sovereignty, and Systems of Indigenous Education

Credits 3

Focuses on the evolution of sovereignty for Native nations as it exists in modern educational systems. Includes exploration of the bureaucratic landscape of Indian education in the United States and leading/advocating for Indigenous students and families across educational systems in ways that allow Native nations to build their sovereign capacities to play a more prominent role in the education of their citizens.

Repeat for Credit

N

Typically Offered

Fall

EDLEA 730 - Leadership, Advocacy, and Action in Indigenous Education**Credits 3**

Prepares educators working in or with Indigenous communities to help create culturally sustaining learning environments. Explores leadership, advocacy and action at the classroom and program management levels with focus on building working technical knowledge.

Repeat for Credit

N

Typically Offered

Spring

EDLEA 740 - Applied Project in Educational Leadership for Indigenous Populations**Credits 3**

Application of theories, principles, and skills learned throughout the Indigenous Education Leadership Certificate program to a professional problem/setting.

Repeat for Credit

N

Requisites

Prerequisite: EDLEA 710, EDLEA 720, and EDLEA 730

Typically Offered

Summer

EDLEA 770 - Educational Change and Technology**Credits 2**

This course deals with educational change, teaming, and information literacy. Three thrusts are considered: the emerging technologies and educational change, shaping change with technology, and the use of technology/information literacy to transform teaching and learning.

Repeat for Credit

N

Typically Offered

Spring

EDLEA 775 - Readings in Educational Leadership**Credits 1-3**

Readings in research and application in specialized areas in education.

Note

Consent of department chair.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDLEA 786 - Topics in Educational Leadership**Credits 1-18**

Examination of current topic in area of specialization of faculty.

Note

Varied topics offered each semester so course may be repeated.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDLEA 795 - Problems in Educational Leadership**Credits 1-18**

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of data pertinent to a given problem. All work is done

independently under the direction of a faculty member.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDLEA 801 - Ethical Dimensions of Educational Leadership

Credits 3

The course rests on the assumption that leadership is a subset of ethics rather than ethics being a subset of leadership. We will examine the ethics of what leaders are, what they do, and how they do it. Students will assess the public and private ethics of leaders, the ethical obligations of leaders and followers, the ways in which leaders shape the ethical environment of institutions, and the temptations of power. We will examine ethical issues related to leadership through case studies concerning leaders in a variety of contexts and cultures. The course looks at how leaders convey values through actions, language, and as role models. It aims to expand students' ethical point of view by first considering personal ethics, then moving on to look at leadership and the common good, and finishing with an examination of ethics in learning communities.

Repeat for Credit

N

Typically Offered

Fall

EDLEA 810 - Historical and Philosophical Analysis of Leadership in Education

Credits 3

This course seeks to insure that students understand the historical and philosophical background that forms the foundation for current educational systems, offerings, and practices, with a focus on educational leadership. Students will be expected to gather information and research from both primary and secondary sources, be reflective practitioners, and apply higher level cognitive and affective skills. Abilities in writing and critical analysis will be required as students apply, analyze, synthesize, and evaluate a variety of writings regarding the history and

philosophy of education in the United States, as well as international influences.

Repeat for Credit

N

Typically Offered

Summer

EDLEA 811 - Philosophy of Education

Credits 3

A critical analysis of major educational philosophies with discussion of their impact on the problem of education for democracy.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDLEA 819 - Introduction to Education Finance

Credits 3

An examination of P-12 public school fiscal policy construction and daily operational issues, including evaluation of local, state, and federal fiscal support, tax structures, distributional formulas, finance reform strategies, and budget preparation and administration.

Repeat for Credit

Y

Typically Offered

Summer

EDLEA 820 - Data Literacy/Data Informed Decisions in Educational Leadership

Credits 3

Examines actionable school mission and vision attentive to values and priorities that include data use, technology, values, equity, diversity, digital citizenship, social-emotional well-being, academic needs, and based on school improvement implementation theory and research. Provides overview of the types of research methodologies, their strengths and limitations, and the contexts to which they are

most suitable to school improvement.

Repeat for Credit

N

Typically Offered

Fall or Spring

EDLEA 825 - Strategic Leadership in Education

Credits 3

This course deals with an overview of educators becoming strategic leaders at the program, building, and district levels. Two central thrusts are considered: (1) professional and ethical leadership, and (2) information management and evaluation leadership. Emphasis is placed on knowledge, skills and attributes to identify contexts, developing with others vision and purpose, utilizing information, framing problems exercising leadership processes to achieve common goals, and acting ethically for educational communities.

Repeat for Credit

Y

Typically Offered

Fall, Summer

EDLEA 827 - Political and Community Leadership in Education

Credits 3

A study of the relationship between the school and the community, with special emphasis on the development of a comprehensive community education program. Organizational patterns, financing, program development, and interaction with other community agencies are analyzed.

Repeat for Credit

N

Typically Offered

Other

EDLEA 828 - Scholarly Orientation to Graduate Studies

Credits 3

This course offers graduate students opportunities to learn how to write in a scholarly way, manage bibliography, understand formatting and citational guidelines of American Psychological Association, conduct index-driven library searches for scholarly sources, and develop an understanding of academic standards of graduate studies in education.

Repeat for Credit

N

Typically Offered

Fall, Summer

EDLEA 830 - Introduction to Educational Facility Planning

Credits 3

An introduction to the principles and processes involved in providing an appropriate physical infrastructure for P-12 education. Emphasis is placed on planning, financing, constructing, maintaining, and utilizing physical resources.

Repeat for Credit

Y

Typically Offered

Summer

EDLEA 831 - Educational Law

Credits 3

An examination of the legal status of educational institutions in the United States; the legal rights and responsibilities of educators including due process, tort liability, and contracts; student rights; landmark court decisions; federal and state legislation impacting on education, and resources available to assist in developing solutions to legal problems.

Repeat for Credit

Y

Typically Offered

Fall, Summer

EDLEA 834 - Strategies for Educational Change

Credits 3

This course provides educators with conceptual knowledge concerning the problems and processes of educational change. Case studies of change are analyzed in the attempt to develop models of educational change.

Repeat for Credit

Y

Typically Offered

Summer

EDLEA 835 - The Principalship**Credits 2**

Analysis of the principal's role as he or she interacts with various referent groups. Applicable to both elementary and secondary administration.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

EDLEA 836 - School-Community Relations**Credits 3**

Interrelationships that exist between the school and the community and the role of the teacher and administrator in such relationships.

Repeat for Credit

Y

Typically Offered

Other

EDLEA 838 - Qualitative Research in Education**Credits 3**

An overview of theoretical and philosophical perspectives informing qualitative research is presented. In addition, methods (design, data collection, data analysis, and reporting) used in qualitative research for educational settings are examined and applied.

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDLEA 841 - District, Building, and Program Leadership in Education**Credits 3**

This course deals with an overview of educators becoming leaders of instruction at the district, building, and program level. Four thrusts are being considered (1) instruction, (2) curriculum, (3) staff development, and (4) supervisory leadership. Considerable emphasis is placed on knowledge, skills, and attributes of learning leadership. Themes of planning, conducting, and assessing performance are covered in depth.

Repeat for Credit

Y

Typically Offered

Spring, Summer

EDLEA 845 - Leadership for Diverse Populations**Credits 3**

Designed for educators to increase their knowledge of self and others regarding issues of diversity. An emphasis is placed on understanding the role of educators in promoting practices and policies supportive of all stakeholders in the educational organization.

Repeat for Credit

Y

Typically Offered

Summer

EDLEA 848 - Understanding Theoretical Frameworks**Credits 3**

Students will explore a variety of philosophical stances that underpin research methods. Examines the nature of reality (ontology) and knowledge (epistemology). Students are expected to develop a personal philosophy of inquiry that will help inform their theoretical and methodological

approaches to research.

Repeat for Credit

N

Requisites

Recommended Prerequisite: EDLEA 838.

Typically Offered

Fall

EDLEA 855 - Administrative Leadership in Curriculum

Credits 3

This course identifies the major roles and responsibilities of school administrators in curriculum-related activities.

Administrative skills necessary for developing and evaluating the curriculum will be examined.

Repeat for Credit

Y

Typically Offered

Other

EDLEA 860 - Inclusive School Culture in Educational Leadership

Credits 3

Examines the use of data to evaluate, cultivate, and advocate for equitable educational resources, technologies, and opportunities that support the educational success and social emotional well-being of each student. Application of knowledge and skills to promote the current and future success of each student and adult and maintain a supportive, equitable, culturally responsive, and inclusive school culture.

Repeat for Credit

N

Typically Offered

Fall or Spring

EDLEA 865 - Administrative Leadership in Staff Development

Credits 3

This course focuses on the role of the administrator in developing, implementing, and evaluating staff development programs. Superintendent, building-level administrator, and staff development director leadership skills will be analyzed.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDLEA 870 - Educational Professional Learning and Human Resources in Educational Leadership

Credits 3

Examines human resource administration practices in school leadership with the capacity to develop and engage staff in a collaborative professional culture designed to promote school improvement, teacher retention, and the success and well-being of each student and adult in the school. Engagement in research-based strategies for personnel supervision and evaluation.

Repeat for Credit

N

Typically Offered

Fall or Spring

EDLEA 875 - Administrative Leadership in Staff Supervision

Credits 3

This course identifies the major roles and responsibilities of superintendents and building-level administrators as supervisors of staff in a K-12 school district.

Repeat for Credit

Y

Typically Offered

Other

EDLEA 885 - Technology Leadership for Administrators

Credits 3

A course designed to provide an in-depth analysis of administrator technology leadership skills necessary for integrating technology in education. The roles and technologies of technology leadership will be studied in the context of staff development, supervision, and curriculum articulation. Considerable attention will be given to strategies necessary for creating district and building technology plans.

Repeat for Credit
Y

Typically Offered
Fall, Summer

EDLEA 886 - Seminar in Educational Leadership

Credits 1-18

Intensive discussion of a problem of current professional interest based on study of pertinent original literature.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

EDLEA 889 - Practicum in Educational Leadership

Credits 1-3

Supervised on-the-job experience in school leadership.

Repeat for Credit
Y

Typically Offered
Fall, Spring

EDLEA 898 - Master's Report

Credits 1-18

Master's Report

Note
Consent of instructor

Repeat for Credit

Y

Typically Offered
Fall, Spring

EDLEA 899 - Master's Research

Credits 1-18

Master's Research

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring

EDLEA 901 - The School District Leader

Credits 3

An examination of research and practice, looking at the role of the school superintendent through the standards for School Leaders, as developed by the Interstate School Leaders Licensure Consortium (ISLLC) and adapted by the state of Kansas for licensure requirements for the district leadership license. Emphasis is placed on leading school improvement efforts, and forming and sustaining purposeful learning communities.

Repeat for Credit
N

Typically Offered
Fall

EDLEA 902 - District Leader Internship

Credits 1-3

Satisfies the internship requirement for the district leadership license recommendation. Students are required to document a minimum 150 clock hours guided field experience through a formal internship and other coursework (i.e., additional internship requirements beyond EDLEA 902 are also imbedded in many courses in the licensure sequence to assist in reaching the 150 clock hour requirement).

Repeat for Credit

N

Typically Offered

Fall, Spring

EDLEA 910 - Educational Human Resource Administration

Credits 3

Human resource administration practices in education are considered along with the implications of collective negotiations and professional accountability for human resource policies.

Repeat for Credit

Y

Typically Offered

Spring, Summer

EDLEA 928 - Organizational Leadership in Education

Credits 3

This course is an examination of the knowledge, skills, and attributes necessary to understand and improve organizations. It includes leadership theory, implementing plans, managing resources, and applying appropriate processes and procedures in varied educational settings.

Repeat for Credit

Y

Typically Offered

Other

EDLEA 929 - Narrative and Arts-Based Inquiry in Qualitative Research

Credits 3

Students will be introduced to narrative and arts-based inquiry to inform their qualitative research projects. Students will identify a genre from narrative and arts-based inquiry to prepare representational and methodological reflection pieces to inform their future research. Topics covered include critical autoethnography, creative non-fiction, visual representation, mixed-medium art and more.

Repeat for Credit

N

Requisites

Prerequisite: EDLEA 838.

Typically Offered

Other

EDLEA 938 - Advanced Data Analysis in Qualitative Methods

Credits 3

An overview and application of data analysis methods in qualitative inquiry. In addition representation of findings, documentation of methods, analytic frameworks, processes of analysis, ethical dilemmas, and human subject approval explored.

Repeat for Credit

N

Requisites

Prerequisite: EDLEA 838

Typically Offered

Spring

EDLEA 948 - Data Representation and Writing in Qualitative Research

Credits 3

Topics covered in this course would vary each semester based on students' writing projects. Topics may include, but not limited to, building methodological arguments, connecting theoretical and methodological frameworks, navigating issues in various genres of data representation, triangulation, and aligning findings with research purpose and questions.

Note

Course is repeatable.

Repeat for Credit

Y

Requisites

Prerequisite: EDLEA 838.

Typically Offered

Fall

EDLEA 950 - Advanced School Business Management

Credits 3

An advanced course in school finance policy and budgeting practices, with particular consideration for hands-on application to school district leadership in Kansas.

Repeat for Credit
N

Typically Offered
Fall

EDLEA 958 - Case Study in Qualitative Research

Credits 3

This is an advanced research course on qualitative case study design and application in social science research. Topics include types of case studies, defining the case, site, and sample selection, data collection methods, within-case and cross-case analysis, and writing case reports. Students will conduct and critique a case study appropriate to their discipline.

Repeat for Credit
N

Requisites
Recommended Foundation Course: EDLEA 838.

Typically Offered
Spring

EDLEA 968 - Discourse Analysis

Credits 3

Students will be exposed to the broad and complex field of discourse analysis. Students will learn about different theoretical and methodological approaches to analyzing the various forms and conceptualizations of "discourse". The course will weave together theory and method, as it will cover discourse analysis as both method and methodology.

Repeat for Credit
N

Requisites
Prerequisite: EDLEA 838 or equivalent.

Typically Offered
Summer

EDLEA 978 - Qualitative Data Management and Analysis Using Nvivo

Credits 3

Students will have opportunity to explore the relationships between current technologies and the theory and methods of research. Students will learn to use qualitative analysis software, Nvivo, with specific data sets for preparation of data files, management of text and image, creation of codes, memos, queries models, and formation of reports.

Note
EDLEA 938 is highly recommended prior to taking this course.

Repeat for Credit
N

Requisites
Prerequisite: EDLEA 838 or equivalent.

Typically Offered
Summer

EDLEA 986 - Advanced Seminars in Educational Leadership

Credits 1-18

These seminars will critically consider recent research in the designated fields. The emphasis will be upon individual studies and small group interaction. Enrollment is restricted to those students who have been admitted to the doctoral program in education and who have completed substantial amounts of graduate study in the designated fields.

Repeat for Credit
Y

Typically Offered
On sufficient demand

EDLEA 988 - Differentiated Research

Credits 3

Students will complete a research project of their choice by

breaking the project into smaller components, setting goals, maintaining accountability, and preparing deliverables towards the completion of the project. Projects can include theory, methodological work, book chapters, publishable papers, dissertation proposal or chapter drafts, grant work, and more.

Repeat for Credit

N

Requisites

Recommended Foundation Course: EDLEA 838 or an advanced research course.

Typically Offered

Fall

EDLEA 991 - Doctoral Internship in Educational Leadership

Credits 1-12

Studies of and field experiences in the development of programs in cooperating schools and educational or related agencies under the supervision of Educational Leadership graduate faculty members.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDLEA 999 - Research in Educational Leadership

Credits 1-18

Individual investigation in the field of a student's specialization.

Repeat for Credit

Y

Typically Offered

Fall, Spring

EDSEC 210 - Careers in Family and Consumer Sciences Education-1

Credits 1

With a focus on family and consumer sciences (FCS) education foundations, FCS framework, FCCLA, FCS branding, and professional practice, this course explores the principles in planning and organizing family and consumer sciences curriculum and career pathways. The course introduces professional practices that support curriculum design elements and instructional methods unique to programs that emphasize technical skill proficiency and competency-based applied learning.

Repeat for Credit

N

Requisites

Corequisite: EDCI 110

Typically Offered

Fall

EDSEC 211 - Careers in Family and Consumer Sciences Education-2

Credits 1

EDSEC 211 With a focus on career pathways, work-based learning, internship development, employability skills, and advisory boards, this course explores the principles in planning and organizing family and consumer sciences curriculum and career pathways. The course introduces professional practices that support curriculum design elements and instructional methods unique to programs that emphasize technical skill proficiency and competency-based applied learning.

Repeat for Credit

N

Requisites

Prerequisites: EDCI 110 Foundations of Education and EDSEC 210.

Typically Offered

Spring

EDSEC 328 - Social Studies Colloquium I

Credits 1

Application and integration of theories and practices of social studies education. Emphasis on rudimentary knowledge of content disciplines and how they can be

incorporated in education.

Repeat for Credit

N

Typically Offered

Fall

EDSEC 360 - Introduction to Physical Education/Health

Credits 3

This course includes identification of competency-based, goal-oriented activities appropriate to PK-12 physical education/health. Emphasis on foundations of physical education/health including: exercise science, sport, careers, and challenges for the future.

Repeat for Credit

N

Typically Offered

Fall

EDSEC 380 - Adaptive Physical Education

Credits 2

Emphasizes the principles and practices involved in providing activities for individuals who have disabilities or temporary limitations and cannot participate in or benefit from the regular activity program. This course is designed to prepare physical education teachers to provide safe, appropriate, and individualized accommodations to children with disabilities who are included in general physical education programs.

Repeat for Credit

N

Requisites

Prerequisite: EDSEC 360.

Typically Offered

Spring

EDSEC 428 - Social Studies Colloquium II

Credits 1

Continuation of application and integration of theories and practices of social studies education. Emphasis on

rudimentary pedagogical strategies and how they can be incorporated in social studies education.

Repeat for Credit

N

Requisites

Prerequisite: EDSEC 328.

Typically Offered

Fall, Spring

EDSEC 455 - Teaching in a Multicultural Society

Credits 1

Application of multicultural understandings to teaching in a multicultural society. Strategies for working effectively with students to achieve educational equity.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

EDSEC 477 - Content Area Literacies and Diverse Learners

Credits 2

Development of content area literacies to include concern for culturally and linguistically diverse learners.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 455

Typically Offered

Fall, Spring

EDSEC 490 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Note

Requires consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDSEC 502 - Independent Study in Secondary Education**Credits 1-3**

Selected topics in professional education.

Note

Consent of department chair.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDSEC 525 - Interpersonal Relations in the Schools**Credits 1**

A didactic and experiential course designed to develop an understanding of human relations skills in the schools. Provides knowledge and skills necessary to work effectively with students, parents, and school personnel. Particular emphasis is on the basis for interpersonal relations in education, communication skills, the facilitative relationship, working with students in groups, and conducting meetings with parents and school personnel.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 477

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

EDSEC 528 - Social Studies Colloquium III**Credits 3**

Application and integration of theories and practices of content disciplines into instruction. Emphasis on design and presentation of lessons through lenses of social studies disciplines.

Repeat for Credit

N

Requisites

Corequisite: EDSEC 544

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

EDSEC 530 - Art Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to art instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 531

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

EDSEC 531 - Art Methods Practicum

Credits 2

This field-based experience provides the opportunity for students to plan, teach, and evaluate art education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall

EDSEC 532 - Business Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to business instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 533

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

EDSEC 533 - Business Methods Practicum**Credits 2**

This field-based experience provides the opportunity for students to plan, teach, and evaluate business education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall

EDSEC 536 - Language Arts Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to language arts instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 537

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

EDSEC 537 - Language Arts Methods Practicum**Credits 2**

This field-based experience provides the opportunity for students to plan, teach, and evaluate language arts education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall, Spring

EDSEC 538 - Mathematics Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to mathematics instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 539

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

EDSEC 539 - Mathematics Methods Practicum**Credits 2**

This field-based experience provides the opportunity for students to plan, teach, and evaluate mathematics education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall, Spring

EDSEC 540 - Modern Language Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to modern languages instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 541

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

EDSEC 541 - Modern Language Methods Practicum**Credits 2**

This field-based experience provides the opportunity for students to plan, teach, and evaluate modern language education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall

EDSEC 542 - Science Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to science instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of

the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 543

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

EDSEC 543 - Science Methods Practicum

Credits 2

This field-based experience provides the opportunity for students to plan, teach, and evaluate science education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall, Spring

EDSEC 544 - Social Studies Methods for Secondary and Middle Schools

Credits 3

Principles of teaching applied to social studies instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 545

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

EDSEC 545 - Social Studies Methods Practicum

Credits 2

This field-based experience provides the opportunity for students to plan, teach, and evaluate social studies education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall, Spring

EDSEC 546 - Physical Education/Health Methods for Secondary and Middle Schools

Credits 3

This course provides students opportunities to study, discuss, organize, and practice instructional methods designed specifically for secondary and middle school physical education/health programs. Emphasis will be placed on understanding of the objectives, characteristics, and activities available to satisfy student growth and development. The course addresses movement education, rhythm games of low organization, body manipulative, object manipulative, and specific sport skills.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 547

Typically Offered

Fall

EDSEC 547 - Physical Education/Health Practicum for Secondary and Middle Schools**Credits 2**

This field-based experience provides the opportunity for students to plan, teach, and evaluate physical education/health education lessons within a placement at the middle or secondary level. This practicum also requires students to incorporate reading methods and apply instructional technology in their instruction.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 320, Corequisite: EDSEC 525

Typically Offered

Fall

EDSEC 582 - Teaching Internship in Music**Credits 6-12**

Observation and teaching under the direction of selected music teachers in elementary, middle level, and secondary school music programs.

Note

Admission to Professional Semester.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDSEC 586 - Teaching Internship in Secondary Schools**Credits 1-12**

Observation and teaching participation under the direction of selected secondary teachers.

Note

Admission to Professional Semester.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDSEC 611 - Coordination Techniques**Credits 1**

Acquaints students with techniques in selecting, implementing, and coordinating occupational programs between the school and the business community.

Repeat for Credit

N

Requisites

Prerequisite: EDSEC 620.

Typically Offered

Spring

EDSEC 614 - Laboratory Techniques in Teaching Science**Credits 3**

Rationale for laboratory in secondary school science. The design and implementation of laboratory activities and demonstrations in a high school science program.

Note

Corequisite: EDSEC 542 and EDSEC 543.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent enrollment recommended for EDSEC 542 and EDSEC 543.

Typically Offered

Fall, Spring

EDSEC 620 - Principles and Philosophy of Career and Technical Education**Credits 2-3**

Principles of career and technical education in Kansas and other states and countries; principles and philosophy

underlying such education, relation of career and technical education to school objectives and community, state, and national needs.

Repeat for Credit

N

Typically Offered

Fall, Summer

Crosslisted

AGED 620

EDSEC 621 - Program Planning in Career and Technical Education

Credits 2-3

The program development and planning process; development of guides for teaching and evaluating reimbursable secondary programs.

Repeat for Credit

N

Requisites

Prerequisite: EDSEC 620.

Typically Offered

Fall, Spring, Summer

EDSP 224 - Exceptional Child in the Regular Classroom

Credits 3

Designed for general education teachers in meeting the needs of exceptional children. Support strategies for teachers and exceptional children in the mainstream of education will be explored.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

EDSP 323 - Exceptional Students in the Secondary School

Credits 2

Designed for regular classroom teachers in meeting the needs of exceptional adolescents. Support strategies for teachers and exceptional students in the mainstream of education.

Repeat for Credit

N

Requisites

Prerequisite: Admission to teacher education.

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

EDSP 415 - American Sign Language - Beginning

Credits 3

The manual alphabet and numbers in American Sign Language, and approximately 500-700 signs. Other topics will include the use of various sign language systems used in the United States, the history of sign language, deaf culture, and the discussion of education of deaf and hard of hearing students.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDSP 502 - Independent Study in Special Education

Credits 1-3

Selected topics in professional education. Maximum of three hours applicable toward degree requirements.

Note

Consent of department chair.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

EDSP 509 - Introduction to Autism Spectrum Disorder

Credits 3

Designed to prepare teacher candidates with the ability to recognize and build upon the strengths and needs of students with autism spectrum disorders (ASD). Employ various instructional strategies and locate appropriate educational materials for students with ASD.

Repeat for Credit
N

Typically Offered
Fall or Spring

EDSP 615 - American Sign Language - Intermediate

Credits 3

This course is a continuation of the Beginning Sign Language course. Approximately 400 additional signs will be taught. There will be discussion of grammar and syntax of American Sign Language. There will be emphasis on conversational use of sign language. Other topics include the use of assistive technology and the use of sign language with various special populations.

Repeat for Credit
N

Requisites
Pre-Requisite: EDSP 415 or instructor permission

Typically Offered
On sufficient demand

EDSP 709 - Autism Spectrum Disorder

Credits 3

Designed to prepare teacher candidates with the ability to recognize and build upon the strengths and needs of students with autism spectrum disorders (ASD). Employ various instructional strategies and locate appropriate educational materials for students with ASD.

Repeat for Credit
N

Typically Offered
Fall, Spring

EDSP 711 - Characteristics of Exceptionalities

Credits 3

Provide an overview of exceptionality as it pertains to students. The processes of IEP development and characteristics of both high and low incidence populations will be examined. Each area of exceptionality will be reviewed in terms of etiology, diagnosis, prevalence, remediation, and educational strategies.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

EDSP 742 - Intensive Interventions for Students with Emotional Disability

Credits 3

Educational planning assessment, instructional methods, curricular modifications, media and materials, teacher competencies, and model programs for students with emotional disability.

Repeat for Credit
N

Typically Offered
Spring, Summer

EDSP 743 - Intensive Interventions for Students with Dyscalculia and Other Math Difficulties

Credits 1-3

This course is designed to prepare educators to improve math achievement of students with or at-risk for significant math difficulties or disabilities such as dyscalculia.

Repeat for Credit

N

Requisites

EDSP 224 or EDSP 323

Typically Offered

Fall, Spring

EDSP 744 - Intensive Interventions for Students with Dyslexia and Other Reading Difficulties

Credits 1-3

This course is designed to prepare educators to improve the reading achievement of students with or at-risk for significant reading difficulties or disabilities such as dyslexia.

Repeat for Credit

N

Typically Offered

Spring, Summer

EDSP 745 - The Consulting Process in Special Education

Credits 3

A course to prepare special education teachers with skills for consulting effectively with classroom teachers, related services personnel, administrators, and parents about curriculum and program alternatives for exceptional children. Emphasis is upon developing collaborative consultation processes through communication, cooperation, and coordination techniques.

Repeat for Credit

N

Requisites

Prerequisite: (EDSP 323 or EDSP 224) and (EDSP 742 or EDSP 743)

Typically Offered

Summer

EDSP 775 - Readings in Special Education

Credits 1-3

Readings in research and application in specialized areas in education.

Repeat for Credit

Y

Requisites

Prerequisite: HDFS 110.

Typically Offered

Fall, Spring, Summer

EDSP 777 - Social Emotional Learning and Behavior Management Strategies

Credits 3

Theoretical and practical applications of behavior analysis in schools with emphasis on preventing and remediating behavior problems of students with disabilities.

Repeat for Credit

N

Typically Offered

Fall, Spring

EDSP 778 - Technology for Special Education

Credits 3

Designed to help special educators develop an awareness of assistive technology (AT) and related legislative guidelines, which can assist in the lives and learning of students receiving special education. This course will explore assistive technology devices and services and software appropriate for students with special needs. Internet resource and AT evaluation systems related to special education will also be covered.

Repeat for Credit

N

Typically Offered

Fall

EDSP 785 - Practicum I

Credits 1-3

Observation and participation in teaching individuals with

exceptional educational needs under the supervision of selected teachers in special education.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 711, EDSP 742, and either EDSP 743 or EDSP 744. Instructor permission required.

Typically Offered

Fall, Spring

EDSP 786 - Topics in Education

Credits 1-3

Examination of current topic in specialization of faculty. Varied topics offered each semester so course may be repeated.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 315.

Typically Offered

Fall, Spring, Summer

EDSP 787 - Field Experiences in Special Education

Credits 1-3

Observation and supervised activities in schools, camps, clinics, or institutions related to student's area of special interest or preparation.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDSP 795 - Problems in Special Education

Credits 1-18

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation in a special field or the collection and analysis of data

pertinent to a given problem. All work is done independently under the direction of a faculty member. As many conferences are held as necessary to assure successful completion of a project necessary for the problem undertaken and consent of instructor.

Note

Background of courses necessary for the problem undertaken and consent of instructor.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDSP 800 - Practicum II

Credits 3

Observation and participation in teaching individuals with exceptional educational needs under the supervision of selected teachers in special education.

Repeat for Credit

N

Requisites

Prerequisite: EDSP 785

Typically Offered

Fall, Spring

EDSP 830 - Assessment in Special Education

Credits 3

A study of assessment procedures used in the pre-referral, identification, and instructional phases of program planning for students with special needs.

Repeat for Credit

Y

Typically Offered

Fall

EDSP 833 - Administration of Special Education Programs

Credits 2-3

The study of administrative units for special education,

placement procedures, federal and state legislation, and program reimbursement and funding.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDSP 835 - The IEP Process in Special Education

Credits 1-3

EDSP 835 is a comprehensive course that focuses on the development and implementation of Individual Education programs (IEPs) in the context of special education. Throughout the course, students will gain a deep understanding of the legal framework surrounding Free Appropriate Public Education (FAPE) and the significance of creating educationally meaningful and legally sound IEPs. They will learn the fundamental components of an IEP and practice writing each section to meet the individual needs of students. Additionally, students will develop skills in assessing and analyzing IEPs, including the use of screening tools and assistive technology assessment. The course also covers transition programming in IEPs and provides opportunities for students to engage in comprehensive case studies. By the end of the course, students will have the knowledge and skills to create comprehensive and effective IEPs that support students with special needs.

Repeat for Credit

N

Requisites

EDSP 830

Typically Offered

Spring

EDSP 841 - Interventions: Low Incidence Special Education

Credits 3

Curriculum content, methods, and organization of educational programs for children and youth with low incidence special education needs.

Repeat for Credit

Y

Typically Offered

Fall

EDSP 844 - Special Education in Secondary Schools

Credits 2

Educational perspectives in service delivery options, educational planning, general instructional approaches, learning strategies, and adaptations and modifications of instructional materials and settings for the secondary student in special education.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 711, EDCI 315, and EDSP 743

Typically Offered

Summer

EDSP 845 - Special Education Programming: Parental Involvement

Credits 2

An in-depth consideration of the role of home and parents in the educational programming for exceptional children. Emphasis on practical and positive strategies used in working with parents.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 711

Typically Offered

Fall

EDSP 846 - Interventions: Early Childhood Special Education

Credits 3

Strategies, policies, and procedures for the education of young children (0-5 years of age) with disabilities. Areas of emphasis include Individual Service Plans, interagency collaboration, and specific strategies for parents and young

children.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 710.

Typically Offered

Spring

EDSP 848 - Transitions in Special Education

Credits 3

A study of transition models, curricula, assessment, career development, community resources and agencies, and materials.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 711

Typically Offered

Summer

EDSP 849 - Interventions: Autism Spectrum Disorders

Credits 3

Assessment, curriculum content, educational considerations, interventions, and organization of programs for children and youth with Autism Spectrum Disorders.

Repeat for Credit

Y

Typically Offered

Summer

EDSP 853 - College Students with Disabilities

Credits 3

This course is designed to familiarize higher education personnel with the increasing number of students with disabilities who now attend our institutions of higher education. The course will examine the legal foundations for students with disabilities in higher education, provide a framework for understanding the unique needs of students

with learning disabilities, attention deficit disorders, mental health issues, as well as those on the autism spectrum, and examine the role of higher education personnel in helping these individuals be successful thriving college students.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDSP 860 - Special Education Law

Credits 3

Analysis of legislation, litigation, and administrative rulings related to special education. The course will emphasize the development of legally sound policies and procedures to ensure that schools provide an educationally meaningful and legally correct education for students with disabilities.

Repeat for Credit

N

Typically Offered

On Sufficient Demand

EDSP 885 - Practicum in Education of Individuals with Low Incidence Special Education Needs

Credits 1-6

Observation and participation in teaching individuals with low incidence special educational needs under the supervision of selected teachers in Special Education programs.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 841.

Typically Offered

Spring

EDSP 886 - Seminar in Special Education

Credits 1-18

Intensive discussion of research or problems of current professional interest based on study of pertinent original literature.

Repeat for Credit

Y

Typically Offered

On sufficient demand

EDSP 888 - Externship in Special Education

Credits 1

The course provides a forum for self-directed development of competencies in Special Education. Students conduct self-assessment and develop strategies for ongoing professional development.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 885.

Typically Offered

Fall, Spring, Summer

EDSP 889 - Advanced Practicum: Autism Spectrum Disorders

Credits 1-6

Observation and participation in teaching individuals with Autism Spectrum Disorders under the supervision of selected teachers in Special Education programs.

Repeat for Credit

Y

Requisites

Prerequisite: EDSP 849 and EDSP 885 (6 hours).

Typically Offered

On sufficient demand

EDSP 898 - Master's Report

Credits 1-18

Master's Report

Note

Permission by department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDSP 899 - Master's Research

Credits 1-18

Master's Research

Note

Permission by department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDSP 986 - Advanced Seminar in Special Education

Credits 0-18

These seminars will critically consider recent research in the designated fields. The emphasis will be upon individual studies and small group interaction. Enrollment is restricted to those students who have been admitted to the doctoral program in education and who have completed substantial amounts of graduate study in the designated fields.

Note

Consent of instructor.

Repeat for Credit

N

Typically Offered

On sufficient demand

EDSP 991 - Internship in Special Education

Credits 1-18

Studies of and field experiences in the development of programs in cooperating schools and educational or related agencies under the supervision of College of Education graduate faculty members. A maximum of 6 credit hours may be chosen from the areas listed.

Note

Consent of department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

EDSP 999 - Research in Special Education**Credits 1-18**

Individual investigation in the field of a student's specialization.

Note

Sufficient training to carry on the line of research undertaken.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 080 - Developmental English**Credits 3**

Basics of standard edited (written) English with emphasis on grammar, usage, and sentence structure. This course does not fulfill requirements for the associate degree.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENGL 100 - Expository Writing I**Credits 3**

Introduction to expressive and informative writing. Frequent discussions, workshops, and conferences. Offers extensive practice in the process of writing: getting ideas, drafting, analyzing drafts, revising, and editing.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENGL 170 - Writing Studio**Credits 0-3**

Support for students concurrently enrolled in writing-intensive classes, including planning, organization, drafting, revising, and editing/proofreading.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 185 - Race, Film, and American Stories**Credits 3**

Introduces students to how race functions in movies, books, and more. It will further examine how movies and books activate and reflect change. Students will analyze artistic expression from one or more American Ethnic traditions, including film and literature, and possibly also music, comics, TV, and other texts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

ENGL 185 and AMETH 185

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 187 - Book Club**Credits 3**

Cultivates a reading habit that enhances life skills such as critical reading, thinking, discussion, and writing strategies. Readings will include a range of books selected by the instructor and the students.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 200 - Expository Writing II**Credits 3**

Introduction to writing persuasively. As with ENGL 100, uses discussion, workshops, and conferences, and emphasizes the writing process.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100

Typically Offered

Fall, Spring, Summer

ENGL 210 - Honors English**Credits 3**

Critical reading and writing for students enrolled in the Honors Program. Each individual section will concentrate on themes determined by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ENGL 213 - Writing Arguments for Architecture Students**Credits 3**

Introduction to writing persuasively for students in Architecture. As with ENGL 100, uses discussion, workshops, and conferences, and emphasizes the writing process.

Note

Required for majors in Architecture.

Repeat for Credit

N

Requisites

Pre-Req: ENGL 100. Must be enrolled in a degree program in Architecture.

Typically Offered

Fall, Spring, Summer

ENGL 220 - Fiction into Film**Credits 3**

Critical analysis of literary texts and their film adaptations.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 224 - Television as Literature**Credits 3**

Critical analysis of television as a literary form.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 227 - Video Games as Literature**Credits 3**

Critical analysis of video games as a literary form.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 230 - Classical Cultures

Credits 3

Courses examine Western culture through literature, philosophy, religion, art, and music. Introduction to Western Humanities courses: ENGL 230, ENGL 231, ENGL 233, ENGL 234 may be taken individually and in any order.

This course examines Ancient Greek and Roman cultures.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 231 - Medieval and Renaissance

Credits 3

Courses examine Western culture through literature, philosophy, religion, art, and music. Introduction to Western Humanities courses: ENGL 230, ENGL 231, ENGL 233, ENGL 234 may be taken individually and in any order.

This course examines Middle Ages to mid 1600s.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 233 - Reformation to Enlightenment

Credits 3

Courses examine Western culture through literature, philosophy, religion, art, and music. Introduction to Western Humanities courses: ENGL 230, ENGL 231,

ENGL 233, ENGL 234 may be taken individually and in any order.

This course examines the Beginnings of Protestantism through the 18th century.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 234 - Modern

Credits 3

Courses examine Western culture through literature, philosophy, religion, art, and music. Introduction to Western Humanities courses: ENGL 230, ENGL 231, ENGL 233, ENGL 234 may be taken individually and in any order.

This course examines the 19th century to the present.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 251 - Introduction to Literature

Credits 3

Study of fiction, poetry, drama, and nonfiction.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 253 - Short Story**Credits 3**

Study of short stories from world literature with emphasis on American, British, and Continental.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 260 - British Literature**Credits 3**

Selected writers from various periods of British literary history.

Note

Designed for students not majoring/minoring in English.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 269 - Introduction to Creative Writing**Credits 3**

An introduction to creative writing with practice in short fiction, poetry, and creative nonfiction.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 270 - American Literature**Credits 3**

Selected writers from various periods in American literary history.

Note

Designed for students not majoring/minoring in English.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 275 - Wild Lit**Credits 3**

An introductory survey of environmental literature.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 280 - Studies in World Literature and Culture**Credits 3**

Investigation of a particular theme or genre in World literature or culture.

Note

Taught in English. Topics vary.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted
MLANG 280

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Global Issues and Perspectives

ENGL 285 - Introduction to American Ethnic Literatures

Credits 3

Study of ethnic and multicultural literatures of the United States, such as African American, Asian American, Latina/o, Jewish, and Native American. May offer cross-cultural comparisons of different ethnic traditions or may focus on a single ethnic tradition.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Human Diversity within the U.S.

ENGL 287 - Great Books

Credits 3

Introduction to world classics from past to present.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Historical Perspectives

ENGL 295 - Selected Studies in English

Credits 1-3

Selected studies in literature, language, rhetoric, and cultural studies.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

K-State 8
Aesthetic Interpretation

ENGL 297 - Honors Introduction to the Humanities I

Credits 3

Study of selected major works of history, literature, and philosophy of central importance in the Western cultural tradition. Emphasis on classroom discussion and writing interpretive essays.

Note
Limited to entering freshmen. Consent of instructor

Repeat for Credit
N

Typically Offered
Fall

Crosslisted
HIST 297, MLANG 297, PHILO 297

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Historical Perspectives

ENGL 298 - Honors Introduction to the Humanities II

Credits 3

Continuation of ENGL 297.

Repeat for Credit
N

Requisites
Prerequisite: ENGL 297 or consent of instructor.

Typically Offered
Spring

Crosslisted

HIST 298, MLANG 298, PHILO 298

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 299 - Honors Topics in English**Credits 3**

Readings and colloquia in selected topics in literature or language.

Repeat for Credit

N

Requisites

Prerequisite: Open only to arts and sciences honors program students and to others completing ENGL 100 or ENGL 200 and ENGL 110 or ENGL 125 with a 3.5 GPA.

Typically Offered

Fall, Spring

ENGL 300 - Expository Writing III**Credits 3**

Advanced practice in writing a variety of expository forms: personal essays and informative and persuasive reports. Additional work on style and the demands of various rhetorical situations.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

ENGL 302 - Technical Writing**Credits 3**

This writing course will provide students from a number of business, technology and aviation disciplines with intensive practice writing the kinds of documents that are common in their future professional lives.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100 and sophomore standing.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

ENGL 309 - Introduction to Classical Literature in Translation**Credits 3**

Introduction to canonical works of Greek and Roman Literature in translation. Discussion of classical texts with attention to material culture, visual media, and classical culture.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

CLSCS 309

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 310 - Introduction to Literary Studies**Credits 3**

Elements of literary form and style: an introduction to criticism for English majors. Intended as a first course in the analysis of form and technique, an introduction to literary terms commonly used in later courses, and practice in critical writing. Readings from a broad range: poems, plays, essays, and novels.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 312 - Writing with AI: Fundamentals of Generative AI Literacy

Credits 1

Introduction to the fundamentals of generative AI literacy, including writing, research, and workflow terminology and applications and the benefits, risks, and responsible use of these tools.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210 or department consent.

Typically Offered

Fall, Spring, Summer

ENGL 315 - Introduction to Popular Culture

Credits 3

Theories and methods for studying popular culture including literature, film, comics, television, social media, games, and other forms of popular culture.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 324 - Television

Credits 3

Study of television as a genre from historical beginnings to contemporary moment. Emphasis on form and critical analysis.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 325 - Literature and Technology

Credits 3

Students will read in a variety of literary, civic, and professional genres about technology and its effect on society; through writing, understand technology in terms of humanistic themes.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 326 - Introduction to Digital Humanities

Credits 3

Explore digital mediums for humanities scholarship, focusing primarily on literary texts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 330 - Fiction

Credits 3

Study of fiction as genre from historical and contemporary contexts and cultures. Emphasis on form and critical analysis.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 335 - Film

Credits 3

Study of film as genre from historical beginnings through classic Hollywood to contemporary cinema. Emphasis on form and critical analysis.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 340 - Poetry

Credits 3

Study of poetry as genre from historical and contemporary contexts and cultures. Emphasis on form and critical analysis.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 345 - Drama

Credits 3

Study of drama as genre from historical and contemporary contexts and cultures. Emphasis on form and critical

analysis.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 350 - Introduction to Shakespeare

Credits 3

Study of representative comedies, histories, and tragedies.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 355 - Literature for Children

Credits 3

Survey emphasizing the reading and evaluating of books for children. Required for licensure in elementary education.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 361 - British Survey I

Credits 3

British literature from Anglo-Saxon times to 1700.

Note

Will apply to survey requirement for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 362 - British Survey II**Credits 3**

British literature from 1700 to the present.

Note

Will apply to survey requirement for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 381 - American Survey I**Credits 3**

American literature from pre-colonial times to the Civil War.

Note

Will apply to survey requirement for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 382 - American Survey II**Credits 3**

American literature from the Civil War to the present.

Note

Will apply to survey requirement for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 384 - Multicultural Children's Literature**Credits 3**

Theories of differences and underrepresented experiences as related to, for example, ability, gender, ethnicity, and sexuality, through children's literature.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 385 - Selected American Ethnic Literatures**Credits 3**

Comparative study of ethnic and multicultural literatures of the United States, such as African American, Asian American, Latina/o, Jewish, and Native American. May focus on a single ethnic tradition outside of the four federally recognized minority groups.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 386 - African American Literatures**Credits 3**

Study of African American literatures.

Note

Will apply to the diversity overlay for English Majors.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 387 - American Indian Literatures**Credits 3**

Study of American Indian literatures.

Note

Will apply to the diversity overlay for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 388 - Asian American Literatures**Credits 3**

Study of Asian American literatures.

Note

Will apply to the diversity overlay for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 389 - Latina/o Literatures**Credits 3**

Study of Latina/o literatures.

Note

Will apply to the diversity overlay for English majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 390 - Fable and Fantasy**Credits 3**

Study of modern works in the fabulous or fantastic modes in relation to the traditions underlying them.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 392 - Literature and the Body

Credits 3

Study of literature of the body in relation to health, psychology, life cycle, the environment, and cultural patterns and influences.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

ENGL 395 - Topics in English

Credits 1-3

Selected studies in literature and language.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 399 - Honors Seminar in English

Credits 1-3

Readings and colloquia in selected masterpieces.

Repeat for Credit

Y

Requisites

Prerequisite: Honors students only.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 400 - Advanced Expository Writing for Prospective Teachers

Credits 3

Expository writing and a brief introduction to the history and theory of teaching writing, primarily for candidates for Secondary licensure in English.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Other

ENGL 412 - Writing with AI: Intermediate Generative AI Skills

Credits 1

Intermediate-level prompt engineering, informed editing, and writing process skills for using generative AI tools for professional and personal writing tasks, with attention to audience and ethical considerations.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 312 or department consent.

Typically Offered

Fall, Spring, Summer

ENGL 415 - Written Communication for Engineers

Credits 3

Study and intensive use of writing forms characteristic of professional practice.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in the College of Engineering with junior or senior standing and ENGL 100 or equivalent with A or B credit or ENGL 200.

Typically Offered
Fall, Spring, Summer

ENGL 417 - Written Communication for the Workplace

Credits 3

Theory and intensive writing practice for students entering the workplace.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing and ENGL 200 or ENGL 210.

Typically Offered
Fall, Spring, Summer

ENGL 420 - Topics in Film

Credits 3

Selected studies in film analysis.

Repeat for Credit
Y

Requisites
Prerequisite: ENGL 200 or ENGL 210.

Typically Offered
Fall, Spring, Summer

K-State 8
Aesthetic Interpretation

ENGL 424 - Topics in Television

Credits 3

Selected studies in television analysis.

Repeat for Credit
Y

Requisites
Prerequisite: ENGL 200 or ENGL 210.

Typically Offered
Fall, Spring, Summer

K-State 8
Aesthetic Interpretation

ENGL 430 - The Structure of English

Credits 3

Systematic study of the structure of the English language utilizing linguistic approaches to the analysis of sounds, lexicon, grammatical structure, and social variation.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Social Sciences

ENGL 435 - Linguistics for Teachers of English

Credits 3

Pedagogical aspects of the structure, history, and use of the English language.

Note
For students seeking secondary licensure in English.

Repeat for Credit
N

Requisites
Prerequisite: ENGL 200 or ENGL 210.

Typically Offered
Fall, Spring

K-State 8
Historical Perspectives
K-State 8 Tag 2
Human Diversity within the U.S.

ENGL 440 - Themes in Literature

Credits 3

Explores the literary treatment of important and recurring themes.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 445 - Literary Kinds

Credits 3

Examines the characteristics, the growth and development, or the uses of specified literary genres.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 450 - Literature and Society

Credits 3

Literature in relation to social and cultural patterns and influences.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 455 - Exploring Creativity

Credits 3

A study of creative thinking.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210 or ENGL 415.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 461 - Introduction to Fiction Writing

Credits 3

A practical introduction to short fiction writing.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 463 - Introduction to Poetry Writing

Credits 3

A practical introduction to poetry writing.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 465 - Introduction to Creative Nonfiction

Credits 3

A practical introduction to creative nonfiction or what can be called "the literature of fact." Writers of creative nonfiction use many of the stylistic and literary tools that fiction writers and poets use, but in the service of rendering factual, literally accurate prose.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 469 - Special Topics in Creative Writing**Credits 3**

Topics vary.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 470 - The Bible**Credits 3**

Literature, history, and cultural backgrounds of the Hebrew Bible (Old Testament) and/or the New Testament and early Christianity.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 476 - American English**Credits 3**

Systematic study of the English language as it has been and is spoken in the continental United States. Topics include regional, social, and ethnic variation, language ideologies, intersections of language and power, and analysis of language variation.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

ENGL 485 - Topics in Rhetoric and Literacy**Credits 3**

Content may emphasize visual rhetoric and literacy, literacy theory, and persuasion, and how such topics are understood in particular contexts and cultures.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 490 - Development of the English Language

Credits 3

Depicts the English language in its place among other world languages, and introduces students to the major ways in which English has changed through time. Considers both internal and external influences as causes of language change.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

ENGL 492 - Humanities Seminar**Credits 3**

Study in depth of selected major figures and movements in Western arts, ideas, and literature.

Repeat for Credit

N

Requisites

Prerequisite: Appropriate introductory humanities course (or an equivalent background, such as courses in Western civilization, art, or world literature) with consent of instructor.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

ENGL 495 - English Internship**Credits 1-3**

Choice between research and service learning internships. A research internship works with English professor on semester-long research project. A service learning intern works with a community organization or other external office to develop written and other materials on behalf of that entity.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 497 - Special Investigations in English**Credits 1-18**

Individual investigation in authors, genres, periods of literature or language.

Repeat for Credit

N

Requisites

Prerequisite: Background of preparation needed for investigation undertaken.

Typically Offered

Fall, Spring

ENGL 498 - Honors Tutorial in English**Credits 1-3**

Individually guided study in which the student will formulate and explore a narrowly defined topic in literature or language.

Note

May be used to initiate research for senior honors thesis. Consent of tutorial instructor

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 499 - Honors Project**Credits 3**

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 500 - Writing Center Theory and Practice

Credits 3

Readings in the field of writing center studies, with attention to topics such as ESL, literacy, and multiculturalism. Literacy studied as it intersects with race, gender, class, ethnicity, and social and institutional structures. Application of theory through a research project and peer tutoring apprenticeship.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or equivalent.

Typically Offered

Fall, Spring, Summer

ENGL 501 - Topics in Classical Literature in Translation

Credits 3

A detailed study of Greek and/or Roman literature in translation in a small discussion setting. Either an open survey of classical literature or the consideration of a specific question.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENGL 510 - Introduction to Professional Writing

Credits 3

Intensive practice in applying rhetorical principles to a number of genres common in non-academic professions and workplaces; an introduction to allied topics such as document design and editing.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring, Summer

ENGL 512 - Writing Creatively and Collaboratively with AI

Credits 1

Advanced practice utilizing generative AI tools to hone writing practice and invention for specific audiences, and the responsibilities associated with entering into a human/machine collaboration.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 312 or department consent.

Typically Offered

Fall, Spring, Summer

ENGL 516 - Written Communication for the Sciences

Credits 3

Theory and intensive writing practice for students in the basic and applied sciences.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and ENGL 200 or ENGL 210. Will not substitute for ENGL 415.

Typically Offered

Fall, Spring

ENGL 525 - Women in Literature

Credits 3

Study of literary works by or about women. Emphasis on historical and cultural contexts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 545 - Literature for Adolescents

Credits 3

Selecting, reading, and evaluating books for adolescents. Required for those seeking middle school and high school certification in English.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210.

Typically Offered

Fall, Spring

ENGL 570 - Law, Politics, and Literature

Credits 3

Classic and contemporary works of literature, including novels, plays, short stories, and poems, are used to explore themes in law and politics.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or junior standing or POLSC 155 or junior standing.

Typically Offered

Fall, Spring, Summer

Crosslisted

POLSC 670

ENGL 575 - Holocaust Literature

Credits 3

Examines texts that represent and react to the experience of Jews during the Holocaust. Emphasis on historical and cultural contexts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENGL 580 - Selected World Literature

Credits 3

Addresses writing by authors whose native origins lie outside Europe or the United States. Content may vary with instructor. May examine literature from several countries or regions, concentrate on literature from one country or region, or focus on a topic which transcends national or regional boundaries. Works are written in or translated into English. Repeatable once with a change of topic.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ENGL 595 - Literary Studies Abroad

Credits 3

Travel abroad, with selected readings, lectures, and discussions which explore the relationships between literary texts and their physical and cultural environments. Topic varies with instructor.

Repeat for Credit

N

Typically Offered

On sufficient demand

ENGL 597 - Career Paths in English and the Humanities

Credits 1

Professional skills development alongside guided research on career options and paths to success for students majoring in English and other humanities disciplines.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 599 - Special Research in English

Credits 1-18

Individual investigation in authors, genres, periods of literature, or language. Background of preparation needed for investigation undertaken.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ENGL 601 - General Phonetics

Credits 3

Description and classification of speech sounds according to point and manner of articulation. Transcription in the International Phonetic Association Alphabet. Includes sounds of English, French, Spanish, German, and others.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

LING 601 and LG 601

ENGL 602 - Historical Linguistics

Credits 3

Internal and comparative reconstruction of earlier forms of languages. Genetic relationships in language families, and various typological considerations. Includes French, Spanish, and others.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

LING 602 and LG 602

ENGL 603 - Topics in Linguistics

Credits 1-3

Seminar on a special-topic in linguistics: decipherment of ancient writing systems, linguistics applied to the teaching of English or other languages, discourse analysis (especially of spoken texts), etc. Topic to be announced for semester in which offered.

Note

Repeatable for credit on a different topic.

Repeat for Credit

Y

Typically Offered

Other

Crosslisted

LING 603 and LG 603

ENGL 604 - Expository Writing Workshop

Credits 3

Course emphasizes stylistic analysis of modern non-fiction prose in the sciences, social sciences, and humanities. Extensive writing required.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

ENGL 605 - Readings in Medieval Literature

Credits 3

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 610 - Readings in Renaissance Literature

Credits 3

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 620 - Readings in Seventeenth-Century British Literature

Credits 3

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 625 - Readings in Eighteenth-Century British Literature

Credits 3

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 630 - Readings in Nineteenth-Century British Literature

Credits 3

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 635 - Readings in Twentieth-and Twenty-First Century British Literature

Credits 3

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 640 - Readings in Early American Literature**Credits 3**

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 645 - Readings in Nineteenth-Century American Literature**Credits 3**

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 650 - Readings in Twentieth- and Twenty-First-Century American Literature**Credits 3**

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 655 - Readings in American Ethnic Literature**Credits 3**

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods. Each semester's offerings will be specifically described before each enrollment period in university and department publications. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 660 - Readings in Major Authors**Credits 3**

This course is one within a sequence of period studies covering the chronological range of English and American literature. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the periods.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

**ENGL 661 - Advanced Creative Writing:
Prose Fiction**

Credits 3

Advanced writing of prose fiction.

Repeat for Credit
Y

Requisites
Prerequisite: ENGL 461 or instructor permission.

Typically Offered
Fall, Spring, Summer

ENGL 662 - Playwriting

Credits 3

Theoretical study and practical application of techniques of playwriting with regard to plot, characters, and production; emphasis on the one-act form.

Repeat for Credit
N

Typically Offered
Fall, Spring

**ENGL 663 - Advanced Creative Writing:
Poetry**

Credits 3

Advanced writing of poetry.

Repeat for Credit
Y

Requisites
Prerequisite: ENGL 463 or instructor permission.

Typically Offered
Fall, Spring, Summer

**ENGL 665 - Advanced Creative Writing:
Nonfiction**

Credits 3

Advanced writing of prose creative nonfiction.

Repeat for Credit
Y

Requisites
Prerequisite: ENGL 465 or instructor permission.

Typically Offered
Fall

**ENGL 669 - Advanced Creative Writing:
Special Topics**

Credits 3

Advanced topics vary.

Note
Instructor consent

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ENGL 670 - Topics in British Literature

Credits 3

This course addresses topics not confined to a single period in a national literature. Specific course content will vary by semester and instructor. It may emphasize cross-national subjects, literary criticism, the development of a theme or genre over time, new perspectives from social, intellectual, or cultural studies, or non-traditional texts and topics.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ENGL 680 - Topics in American Literature

Credits 3

This course addresses topics not confined to a single period in a national literature. Specific course content will vary by semester and instructor. It may emphasize cross-national

subjects, literary criticism, the development of a theme or genre over time, new perspectives from social, intellectual, or cultural studies, or non-traditional texts and topics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 685 - Readings in World Literature

Credits 3

Readings in selected world literary traditions. Readings may focus on individual literary traditions or draw from a variety of world literary traditions

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 690 - Topics in Literature for the Young

Credits 3

This course addresses topics not confined to a single period in a national literature. Specific course content will vary by semester and instructor. It may emphasize cross-national subjects, literary criticism, the development of a theme or genre over time, new perspectives from social, intellectual, or cultural studies, or non-traditional texts and topics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 695 - Topics in Literature

Credits 3

This course addresses topics not confined to a single period in a national literature. Specific course content will vary by semester and instructor. It may emphasize cross-national subjects, literary criticism, the development of a theme or genre over time, new perspectives from social, intellectual, or cultural studies, or non-traditional texts and topics.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 698 - Capstone Seminar

Credits 3

A writing- and discussion-intensive course that provides a culminating experience to the English major.

Note

Topic varies according to instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Twenty-one (21) credit hours in English beyond ENGL 310.

Typically Offered

Fall, Spring

ENGL 700 - Old English

Credits 3

The elements of Old English grammar, with readings in prose and poetry.

Repeat for Credit

N

Requisites

Prerequisite: Instructor permission.

Typically Offered

Fall, Spring, Summer

ENGL 703 - Critical Approaches to Children's Literature

Credits 3

Introduction to advanced study of children's and young adult literature.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENGL 705 - Theories of Cultural Studies**Credits 3**

An overview of theoretical approaches to the study of culture and their current application in English studies.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

ENGL 710 - Studies in a Literary Genre**Credits 3**

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors, periods, or literary movements; with perspectives from social, intellectual, and cultural studies; with literary themes; or with language or linguistics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 715 - Topics in Film / Screen Studies**Credits 3**

A topic course in film, television, and/or media analysis

that applies a theoretical approach or approaches.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing (equal to or greater)

Typically Offered

Fall, Spring, Summer

ENGL 720 - Studies in a Major Author**Credits 3**

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors, periods, or literary movements; with perspectives from social, intellectual, and cultural studies; with literary themes; or with language or linguistics.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 725 - Studies in Children's/Young Adult Literature**Credits 3**

Addresses topics not confined to a single period in a national literature. May emphasize cross-national subjects, literary criticism, the development of a theme or genre over time, new perspectives from social, intellectual, or cultural studies, or nontraditional texts and topics.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 730 - Studies in a Literary Period**Credits 3**

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors, periods, or literary movements; with perspectives from

social, intellectual, and cultural studies; with literary themes; or with language or linguistics.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 740 - Studies in Literary Theory

Credits 3

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors, periods, or literary movements; with perspectives from social, intellectual, and cultural studies; with literary themes; or with language or linguistics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 745 - Cultural Studies

Credits 3

A topics course in Cultural Studies that applies a theoretical approach or approaches.

Repeat for Credit

Y

Typically Offered

Fall

ENGL 753 - Theories of Composition and Rhetoric

Credits 3

An introduction to major theories of composition and/or rhetoric.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

ENGL 755 - Studies in Composition and Rhetoric

Credits 3

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors, periods, or literary movements; with perspectives from social, intellectual, and cultural studies; with literary themes; or with language or linguistics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 756 - Business Communication

Credits 3

A writing-intensive course intended for advanced undergraduate students, graduate students, and working professionals in business.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210 or ENGL 415 or ENGL 417 or ENGL 516 or graduate standing.

Typically Offered

Fall, Spring, Summer

ENGL 757 - Studies in Language and Linguistics

Credits 3

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors,

periods, or literary movements; with perspectives from social, intellectual, and cultural studies; with literary themes; or with language or linguistics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 758 - Scientific Communication

Credits 3

A writing-intensive course intended for advanced undergraduate students, graduate students and working professionals in science.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200 or ENGL 210 or ENGL 415 or ENGL 417 or ENGL 516 or graduate standing.

Typically Offered

Fall, Spring, Summer

ENGL 759 - Studies in Technical Communication

Credits 3

The specific contents will vary by semester and instructor, but the studies courses will reflect concerns with literary and rhetorical forms and genres; with specific authors, periods, or literary movements; with perspectives from social, intellectual, and cultural studies; with literary themes; or with language or linguistics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period. The courses require junior standing and are repeatable with change of subject matter.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 761 - Creative Writing Workshop: Short Fiction

Credits 3

Advanced writing of short prose fiction.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 661 or instructor permission.

Typically Offered

Fall, Spring, Summer

ENGL 762 - Advanced Playwriting

Credits 3

Further study in the writing of drama; emphasis on problems of writing the full-length play.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 662.

Typically Offered

Fall, Spring, Summer

ENGL 763 - Creative Writing Workshop: Poetry

Credits 3

Advanced writing of poetry.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 663 or instructor permission.

Typically Offered

Fall, Spring, Summer

ENGL 765 - Creative Writing Workshop: Creative Nonfiction

Credits 3

Advanced writing of creative nonfiction.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 665 or instructor permission.

Typically Offered

Fall, Spring, Summer

ENGL 767 - Literary Editing and Publishing**Credits 3**

Practice in editing, producing, and marketing of literary manuscripts, including manuscript selection, developmental editing, copyediting, marketing, and publicity in a real-world setting.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

ENGL 769 - Creative Writing Workshop/Special Topic**Credits 3**

Special topics vary.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 771 - Creative Writing Workshop: Novel/Novella**Credits 3**

Creative Writing Workshop: Novel/Novella

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 661 or instructor permission.

Typically Offered

Fall, Spring, Summer

ENGL 772 - Creative Writing Workshop: The YA Novel**Credits 3**

Advanced novel writing focused on young adult readers. Students will read young adult (YA) novels and analyze their structure and form. Students will workshop sections of their own young adult novel.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 661 or instructor permission

Typically Offered

Fall, Spring, Summer

ENGL 790 - History of the English Language**Credits 3**

The development of British and American English from Indo-European origins to the present.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing or instructor permission.

Typically Offered

Fall, Spring, Summer

ENGL 795 - Literary Theory**Credits 3**

A historical survey of literary theory and criticism.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Other

ENGL 797 - Professional Writing Internship

Credits 0-18

Faculty-supervised professional experience, emphasizing application of writing skills in professional contexts. Student projects must be approved by on-site supervisor and faculty supervisor. Report must be submitted at the end of the semester.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 510 or ENGL 665 or ENGL 759 or ENGL 765.

Typically Offered

Fall, Spring, Summer

ENGL 799 - Problems in English

Credits 1-18

Independent study in major authors, genres, and periods of English and American literature and language.

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for problem undertaken.

Typically Offered

Fall, Spring, Summer

ENGL 801 - Graduate Studies in English

Credits 3

A survey of the methods and aims of advanced level research and scholarship in language and literature. Taken in the first year of study toward the M. A. in English as an orientation to the profession.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENGL 805 - Practicum in Teaching University Expository Writing

Credits 1

Required of GTAs teaching Expository Writing in the English Department. Instruction in the theory and practice of teaching in a university expository writing program. Cannot count in the student's program of study.

Repeat for Credit

Y

Requisites

Prerequisite: graduate status and a GTAs hip in the English Department.

Typically Offered

Fall, Spring

ENGL 820 - Seminar in Language

Credits 3

Intensive research concerned with one or more topics in the structure and history of the English language.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

ENGL 825 - Seminar in Literature

Credits 3

Intensive research concerned with one or more literary genres, periods, authors, or issues/problems.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

ENGL 830 - Seminar in Cultural Studies**Credits 3**

Intensive research concerned with one or more topics central to the theory and practice of Cultural Studies.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Other

ENGL 840 - Seminar in Composition and Rhetoric**Credits 3**

Intensive research on materials germane to the history, structure, and processes central to the concerns of Composition and Rhetoric.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

ENGL 862 - Workshop in Playwriting**Credits 3**

Advanced writing of drama.

Repeat for Credit

Y

Requisites

Prerequisite: ENGL 762 or THTRE 762 or proof of equivalency. Proficiency.

Typically Offered

Other

Crosslisted

THTRE 862

ENGL 899 - Research in English**Credits 1-18**

Research in English

Note

Permission, Director of Graduate Studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENSCI 101 - Introduction Environmental Sciences**Credits 1**

Explores environmental science and environmental issues at global and local scales, points out the diverse, interdisciplinary backgrounds and skills needed to solve environmental issues, and reinforces key concepts through field visits.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

ENSCI 410 - Environmental Sciences Internship**Credits 3**

Students will gain experience in the work force, improve communication and interpersonal relation skills, build professional network, and apply classroom knowledge to solve problems in a professional setting. Students will learn what they may enjoy or dislike about potential careers and employers and share that information with their peers.

Repeat for Credit

N

Typically Offered

Summer

ENTOM 100 - Entomology Foundations**Credits 1**

Introduction to Entomology programs, activities, resources, faculty and career opportunities.

Note

1 hour lecture per week

Repeat for Credit

N

Typically Offered

Fall

ENTOM 101 - Insects and People**Credits 3**

Intended for undergraduate non-majors. The focus will be on the global impact of insects and their relatives on human concerns, from acting as disease vectors, agricultural pests, and pollinators to their roles in art, history, and religion.

Note

Two hours lecture and one one-hour interactive session a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

ENTOM 110 - Exploring Topics in Entomology**Credits 1-3**

Explore various topics in entomology, as an introduction to the particular topic.

Note

This may be used with CAT communities or Introductory topics classes.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ENTOM 125 - Introduction to Entomology**Credits 3**

An introduction to the foundational areas of Entomology, including classification, identification, insect biology, and applied Entomology.

Repeat for Credit

N

Typically Offered

On sufficient demand

ENTOM 130 - Insect Collecting Techniques and Collections**Credits 3**

An introduction to the techniques used to collect insects in different habitats and times of day, as well as the preparation of insect specimens and their maintenance in collections.

Repeat for Credit

N

Typically Offered

On sufficient demand

ENTOM 135 - Introduction to Animal Health Entomology**Credits 3**

An introduction to Animal Health Entomology, including the wide range of insects that vector diseases, the types of organisms that are spread by insects, the diseases those organisms cause, and management techniques for the insects.

Repeat for Credit

N

Typically Offered

On sufficient demand

ENTOM 150 - Introduction to Plant Health Entomology

Credits 3

Introduction to the insects that influence plant health, including their identification, their influence, the mechanisms they use to benefit or harm plants, and their management or management abilities.

Repeat for Credit

N

Typically Offered

On sufficient demand

ENTOM 200 - Insect Sampling and Surveillance

Credits 2

Introduction and hands-on experience with insect sampling and surveillance techniques.

Note

This will be taught twice a week for 2 hours per lab

Repeat for Credit

N

Typically Offered

Fall

ENTOM 202 - Art and Insects

Credits 3

Science and art are not different ends of an academic continuum, but rather simultaneously found in all disciplines within academia. The goal of this course is to provide a framework and appreciation that students can utilize to consider all aspects of novel experiences and problems, as global problems require global thinking. The model system for this course will be insects, where students will learn about evolution, genetics, behavior, and biodiversity, while also learning art history, interpretation,

analysis of color and shape, perception, and the role of insect representations in the humanities. While there are specific lectures that cover Insects and Art separately, the majority of lectures combine both science and art.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

ART 202

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Aesthetic Interpretation

ENTOM 205 - Introduction to Insect Data Analysis

Credits 1

Introduction and hands-on experience with basic experimental design and common data analysis techniques used in insect sampling, surveillance, and experiments.

Note

This will be taught once a week for 2 hours per lab

Repeat for Credit

N

Typically Offered

Fall

ENTOM 210 - Introduction to Insecticides

Credits 1

Introduction to insecticides, including their properties, benefits, environmental impact, and laws that regulate their sale, use, and storage.

Note

This will be one hour of lecture per week

Repeat for Credit

N

Typically Offered

Spring

ENTOM 250 - Economic Entomology

Credits 3

Classification, biology, ecology, and principles of management of economically important insects.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

ENTOM 305 - Animal Health Entomology

Credits 2

Introduction to biology of arthropods that affect animal health. The main focus is on strategies to manage arthropods that negatively affect the health and productivity of animals, including beef and dairy cattle, swine, poultry, horses, sheep, goats, pets, and urban wildlife. This course is particularly recommended for students interested in animal science, pre-veterinary medicine, and other agricultural curricula.

Note

Two hours lecture/demo a week.

Repeat for Credit

N

Typically Offered

Fall

ENTOM 306 - Animal Health Entomology Laboratory

Credits 1

This laboratory course complements ENTOM 305 and offers hands-on experience in identification and management of arthropods of veterinary importance. Includes field trips to food animal operations.

Note

One two-hour lab a week.

Repeat for Credit

N

Typically Offered

Fall

ENTOM 312 - General Entomology

Credits 3

A basic study of insects and related arthropods, their structure, physiology, behavior, and relations to plants and animals, including man.

Note

Two hours lecture and two hours of lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

ENTOM 320 - Horticultural Entomology

Credits 3

Biological principles and management considerations for insects and related arthropods affecting horticulture. Practical application of classification and life history information for accurate recognition, monitoring, and pest management decisions. Control tactics and conservation of beneficial species.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

ENTOM 325 - Pollinators

Credits 3

Examines the diversity of animal pollinators, their ecology, current threats to pollinators, and their conservation.

Repeat for Credit

N

Typically Offered

Spring

ENTOM 330 - Basic Beekeeping**Credits 3**

The basics of Beekeeping, including all components of hive development and maintenance, pre- and post-harvest, and business operations are covered.

Repeat for Credit

N

Typically Offered

Fall or Spring

ENTOM 350 - Crops, Insects, and Agroecosystems**Credits 3**

Insects play an important role in crop production and impact many agroecosystems that produce our food. This course will utilize inquiry-based learning to explore the impact of insects on crops and agroecosystems, focusing model crops such as corn.

Note

This course has 2 hours of lecture per week, plus a 2 hour lab once a week.

Repeat for Credit

N

Typically Offered

Spring

ENTOM 399 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 480 - Seminar in Entomology**Credits 1**

Explore current research, teaching, and extension ideas and projects in Entomology through the Departmental seminar series.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ENTOM 481 - Entomological Problems**Credits 1-3**

Study or work in a specific area of entomology that is specialized around student interests or career goals.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 482 - Research Experience in Entomology**Credits 1-3**

A research experience associated with Entomology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 483 - Teaching Experience in Entomology

Credits 1-3

Teaching experience in an Entomology classroom or online environment.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 484 - Extension Experience in Entomology**Credits 1-3**

Extension experience in an area associated with Entomology

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 485 - Entomological Topics**Credits 1-3**

Study of a select topic within Entomology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 486 - Internship in Entomology**Credits 1-3**

An internship experience in an area associated with entomology at an organization outside of the Department of Entomology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 595 - Capstone Experience**Credits 3**

A research, extension, teaching, or industry-based experience that builds upon an individual student's academic training in preparation for a successful career. A final report is to be submitted at the end of the semester along with a presentation over the capstone experience.

Note

There will be a symposium at the end of the semester for students to present their experience.

Repeat for Credit

N

Requisites

Junior Standing.

Typically Offered

Fall, Spring, Summer

ENTOM 605 - Introduction to Insects of Stored Products**Credits 3**

Biology, ecology, and behavior of stored-product insects and current practices involved in their control.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 300, or ENTOM 301, or ENTOM 305, or ENTOM 312.

Typically Offered

Spring-Even Years

ENTOM 612 - Insect Pest Diagnosis**Credits 2**

Diagnosis of plant damage by insects and mites, recognition of harmful insects and mites and beneficial insects. Emphasis on field crop pests but pests of other crops will be considered if there is sufficient interest.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: ENTOM 300, ENTOM 312 or ENTOM 710.

Typically Offered

Fall

ENTOM 620 - Pesticides, People, and the Environment**Credits 2**

Introduction to insecticides and related pesticides, including their classification, formulation, properties, mode of action, metabolism, resistance, benefits and environmental impact, and federal and state laws that regulate their development, sale, use and storage.

Note

Two hours of lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: CHM 110.

Typically Offered

Spring-Even Years

ENTOM 621 - Introduction to Biological Control**Credits 3**

The theory and practice of biological control with an emphasis on natural enemies of insect pests. Relationship and importance of insect ecology and integrated pest management to biological control. Experimental approaches, evaluation, recognition and life histories of beneficial species will be covered.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 300, or ENTOM 301, or ENTOM 305, or ENTOM 312.

Typically Offered

Spring-Odd Years

ENTOM 625 - Integrative Behavioral Ecology**Credits 3**

This course is designed to provide an introductory overview of the genetics, ecology, and evolution of insect behavior, emphasizing research done in insect systems. The topics covered in this course will include: (1) Conceptual and empirical framework for studying behavior, (2) the genetics of behavior, (3) "kinds" of behaviors, and (4) detailed examples of each "kind" of behavior.

Note

Three hours lec a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOL 450.

Typically Offered

Spring

ENTOM 630 - Introduction to Molecular Entomology**Credits 2**

Introduction to use of molecular techniques to address fundamental and applies entomological problems, including systematics, marker-assisted selection of resistant genotypes of plants, mechanisms of insecticide resistance, insect transgenesis, risk assessment of genetically modified organisms, and other topics.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110.

Typically Offered

Fall-Even Years

ENTOM 635 - Insect Evolution**Credits 3**

This course covers the evolution and biodiversity of insects. Topics covered include insects in the fossil record, insect phylogenies, the traits responsible for insect diversity, and the evolution of traits like wings, color,

mimicry, learning, behavior, farming, parasitic lifestyles and social living.

Repeat for Credit
N

Typically Offered
Fall-Even Years

ENTOM 645 - Introduction to Insect Chemical Ecology

Credits 3

The overall objective of this course is to familiarize the student with the interactions among organisms, including insects and other arthropods, which are mediated by naturally produced chemicals.

Repeat for Credit
N

Requisites
Prerequisite: ENTOM 300, or ENTOM 301, Or ENTOM 305, or ENTOM 312.

Typically Offered
Spring-Odd Years

Crosslisted
Spring - Odd Years

ENTOM 649 - Introduction to Arthropod Vectors of Human Pathogens

Credits 3

This course focus will be vectors of medical and veterinary importance. Students will learn several underlying aspects involved in pathogen-vector-vertebrate host interactions, including those associated with cellular, molecular and innate immune response of insects to pathogens they transmit. Students will be introduced to current research programs and topics of interest in the field of medical entomology.

Repeat for Credit
N

Requisites
Prerequisite: ENTOM 300, or ENTOM 301, or ENTOM 305, or ENTOM 312.

Typically Offered
Fall

ENTOM 652 - Introduction to Insect Molecular Techniques

Credits 2

A hands-on introduction to basic molecular biology techniques used in understanding insect biology and physiology, including nucleic acid isolation, polymerase chain reaction, RNA interference, and analysis of experimental results.

Note
This will be taught twice a week for 2 hours/lab.

Repeat for Credit
N

Typically Offered
Fall

ENTOM 657 - Introduction to Toxicology of Insecticides

Credits 3

Study of synthetic and naturally occurring insecticides with emphasis on distribution and elimination, metabolism, mechanism of action, resistance mechanisms, and current advances in new insecticide discovery and new approaches to insect control. The lab focuses on providing hands-on experience with techniques frequently used by toxicologists.

Repeat for Credit
N

Requisites
Recommended Foundation Course: CHM 350, or BIOCH 521, or ENTOM 620.

Typically Offered
Spring-Odd Years

ENTOM 660 - Introduction to Insect Genetics

Credits 3

The course will initially describe the variety of genetic systems found in insects. Laboratory and statistical

techniques will be discussed for studying genetic variation in insect populations. The final part of the course will focus on means for genetic manipulation of populations. The laboratory session will be used to discuss and/or demonstrate techniques for studying insect genetics.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 300, or ENTOM 301, or ENTOM 305, or ENTOM 312.

Typically Offered

Spring-Odd Years

ENTOM 675 - Introduction to Insect Physiology

Credits 3

Functions of insect systems for development, metamorphosis, and reproduction. Physiological and biochemical mechanisms underlying insect activities, behavior, and ecological adaptations.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 300, ENTOM 305, or ENTOM 312.

Typically Offered

Spring-Even Years

ENTOM 692 - Insect Ecology

Credits 3

Abiotic and biotic factors underlying the distribution, abundance, and dynamics of insects. How to measure these factors, how they affect insect population processes, interactions, and community structure, especially in agricultural systems. Emphasis on basic concepts and their application, experimental methods and field techniques.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOL 263, BIOL 529, or ENTOM 312.

Typically Offered

Fall-Even Years

ENTOM 695 - Insect Taxonomy

Credits 3

Laboratory study of insect Order and family-group identification. Proper preparation and maintenance of adult insect collections. Lecture stresses the principles of systematics, legal principles of nomenclature, and the phylogeny of insects and their near relatives. For beginning graduate and advanced undergraduate students.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ENTOM 250 or ENTOM 312.

Typically Offered

Fall-Odd Years

ENTOM 795 - Entomology Seminar

Credits 1

Entomology Seminar

Note

Consult seminar committee.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 799 - Problems in Entomology

Credits 1-18

For nonthesis or nondissertation studies. Work in various fields of entomology.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENTOM 800 - Professional Development in Entomology and Related Sciences

Credits 2

This course will teach students to develop and effectively communicate scientific research and results, including skills in: critical reading of primary literature, developing meaningful hypotheses, outlining a thesis/dissertation literature review, constructing and writing a well-designed scientific proposal, presenting data, communicating effectively to professional and lay audiences, acquiring meaningful peer-review experience, and learning the basics for writing publishable journal articles.

Repeat for Credit

N

Typically Offered

Fall

ENTOM 805 - Insects of Stored Products

Credits 3

Biology, ecology, and behavior of stored-product insects and current practices involved in their control.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 250, or ENTOM 312 and ENTOM 313, or consent of instructor.

Typically Offered

Spring-Even Years

ENTOM 810 - Insect Pest Management

Credits 3

The theory and practice of Integrated Pest Management (IPM) with an emphasis on pests in agricultural systems. Integrated concepts include but are not limited to economic

thresholds, sampling plans, plant resistance to insects, biological control, pesticides and resistance management. Case studies from several row-crop systems are used to explore key concepts.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 250 or ENTOM 312 or consent of the instructor.

Typically Offered

Spring-Even Years

ENTOM 815 - Experience in Extension Entomology

Credits 1-3

Major emphasis is to give students a realistic view of the history, structure, philosophy, and position responsibilities assumed by entomology state and area specialists within the Cooperative Extension Service through hands-on experience.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: ENTOM 612 or ENTOM 767.

Typically Offered

Spring-Even Years

ENTOM 821 - Biological Control

Credits 3

The theory and practice of biological control with an emphasis on natural enemies of insect pests. Relationship and importance of insect ecology and integrated pest management to biological control. Experimental approaches, evaluation, recognition and life histories of beneficial species will be covered.

Note

Two hours of lecture and two hours of lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ENTOM 250 or ENTOM 312 or ENTOM 320 or a college-level ecology course.

Typically Offered

Spring-Odd Years

ENTOM 825 - Advanced Integrative Behavioral Ecology**Credits 3**

This course is designed to provide an advanced overview of the genetics, ecology, and evolution of insect behavior, emphasizing research done in insect systems. The topics covered in this course will include: (1) Conceptual and empirical framework for studying behavior, (2) the genetics of behavior, (3) "kinds" of behaviors, and (4) detailed examples of each "kind" of behavior.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOL 450.

Typically Offered

Spring

ENTOM 830 - Molecular Entomology**Credits 2**

Introduction to use of molecular techniques to address fundamental and applied entomological problems, including systematics, marker-assisted selection of resistant genotypes of plants, mechanisms of insecticide resistance, insect transgenesis, risk assessment of genetically modified organisms, and other topics.

Note

One 2-hour lecture/discussion per week.

Repeat for Credit

N

Typically Offered

Fall-Even Years

ENTOM 835 - Advanced Insect Evolution**Credits 3**

This course covers the evolution and biodiversity of insects. Topics covered include insects in the fossil record, insect phylogenies, the traits responsible for insect diversity, and the evolution of traits like wings, color, mimicry, learning, behavior, farming, parasitic lifestyles and social living.

Repeat for Credit

N

Typically Offered

Fall-Even Years

ENTOM 840 - Immature Insects**Credits 2**

Identification of immature insects to the family level, with emphasis on terrestrial Holometabola and aquatic insects. Techniques for collecting and preserving immatures, with an emphasis on field collecting and identification in laboratory.

Repeat for Credit

N

Requisites

Prerequisite: ENTOM 695.

Typically Offered

Summer-Odd Years

ENTOM 845 - Insect Chemical Ecology**Credits 3**

The overall objective of this course is to familiarize the student with the interactions among organisms, including insects and other arthropods, which are mediated by naturally produced chemicals.

Repeat for Credit

N

Requisites

Recommended Foundation Course: CHEM 350 General Organic Chemistry or its equivalent, or the consent of the instructor.

Typically Offered

Other

ENTOM 849 - Arthropod Vectors of Human Pathogens**Credits 3**

Focus will be vectors of medical/veterinary importance and pathogen-vector-vertebrate host interactions, including those associated with cellular, molecular and innate immune response of insects to pathogens they transmit. Students will be introduced to current research programs and topics of interest in the field of medical entomology.

Note

Two hours of lecture a week, plus 2 hours of lab.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOL 198, ENTOM 312, and BIOL 398.

Typically Offered

Fall

ENTOM 852 - Insect Molecular Techniques**Credits 2**

Hands-on experience with basic molecular biology techniques used in understanding insect biology and physiology, including nucleic acid isolation, polymerase chain reaction, RNA interference, and analysis of experimental results. Students will conduct an individual research project and presentation.

Repeat for Credit

N

Typically Offered

Fall

ENTOM 857 - Toxicology of Insecticides**Credits 3**

Advanced study of synthetic and naturally occurring insecticides with emphasis on distribution and elimination, metabolism, mechanism of action, resistance mechanisms, and current advances in new insecticide discovery and new

approaches to insect control. The lab focuses on providing hands-on experience with techniques frequently used by toxicologists.

Note

Two hours of lecture and one 3 hour lab each week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: CHM 350, or BIOCH 521, or ENTOM 620.

Typically Offered

Spring-Odd Years

ENTOM 860 - Insect Genetics**Credits 3**

The course will initially describe the variety of genetic systems found in insects. Laboratory and statistical techniques will be discussed for studying genetic variation in insect populations. The final part of the course will focus on means for genetic manipulation of populations. The laboratory session will be used to discuss and/or demonstrate techniques for studying insect genetics.

Note

2 hours lecture and one 3-hour lab each week.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

ENTOM 875 - Insect Physiology**Credits 3**

Functions of insect systems for development, metamorphosis, and reproduction. Physiological and biochemical mechanisms underlying insect activities, behavior, and ecological adaptations.

Note

Three 50 minute lectures per week.

Repeat for Credit

N

Typically Offered
Spring-Even Years

ENTOM 892 - Advanced Insect Ecology

Credits 3

This course addresses population and community ecology, plant-insect interactions, insect biodiversity and biogeography, and applied ecology. The course will weave basic ecological theory and principles with their application to entomological problems such as conservation, biological control, agriculture, and insect-vectored diseases of plants and humans.

Note
Three hours lecture/discussion per week.

Repeat for Credit
N

Requisites
Recommended Foundation Course: BIOL 529 or ENTOM 692 or a college-level ecology course.

Typically Offered
Fall-Odd Years

ENTOM 895 - Advanced Insect Taxonomy

Credits 3

Advanced laboratory study of insect Order and Family-group identification. Proper preparation and maintenance of adult insect collections. Lecture stresses the principles of systematics, legal principles of nomenclature, and the phylogeny of insects and their near relatives.

Repeat for Credit
N

Typically Offered
Fall

ENTOM 898 - Master's Report in Entomology

Credits 1-18

Work in various fields of entomology.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ENTOM 899 - Master's Research in Entomology

Credits 1-18

For student majoring in entomology.

Note
Knowledge in special area and consent of instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ENTOM 930 - Topics in Entomology

Credits 1-9

Selected topics for advanced study in entomology.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring

ENTOM 932 - Teaching Experience in Entomology

Credits 1-3

Teaching experiences for graduate students, including classroom instruction, development of curriculum materials, and other pedagogical methods.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring

ENTOM 995 - Entomology Seminar

Credits 1

Entomology Seminar

Note
Consult seminar committee. Pass/fail grade only.

Repeat for Credit
Y

Typically Offered
Fall, Spring

ENTOM 999 - Research in Entomology

Credits 1-18

Dissertation credit for students majoring in entomology.

Note
Knowledge in special area and consent of instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ENTRP 340 - Business Innovation and the Entrepreneurial Mindset

Credits 3

An examination of business innovation and provides students with an understanding of how creativity and the entrepreneurial mindset impact the success of organizations.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Empirical and Quantitative Reasoning

ENTRP 350 - Technology and Innovation Management

Credits 3

This course presents the main issues in the management of innovation and an appreciation of the relevant skills needed to manage innovation at both strategic and operational levels. The course focuses on four themes: (1) the source, discovery, and evaluation of innovation and opportunities; (2) the provisions of innovation (products and services) that satisfy the needs of customers; (3) the development of mechanisms to appropriate the returns from the exploitation of the innovation; and (4) the organization of efforts to innovate.

Repeat for Credit
N

Requisites
Prerequisite: ENTRP 340 or junior standing.

Typically Offered
Spring

K-State 8
Empirical and Quantitative Reasoning

ENTRP 411 - Intrapreneurship

Credits 3

The role of the organizational member is examined as to how ideas and innovations are created, nurtured, assessed, and implemented within existing organizations. Challenges to be studied include how entrepreneurial insight can be channeled toward product creation, how product championing can lead to legitimization within the organization, and how product and organizational strategies can be implemented, assessed and renewed.

Repeat for Credit
N

Typically Offered
Spring

ENTRP 435 - Entrepreneurial Experience

Credits 3

Explores the creative and innovative careers of successful entrepreneurs. Students will learn what it takes to be a

successful entrepreneur from a multitude of business owners; learning from their extensive professional backgrounds and personal experiences. Will promote a deeper understanding of common entrepreneurial pitfalls and explores the skills and tools necessary to start and grow a successful business.

Repeat for Credit

N

Typically Offered

Fall

ENTRP 440 - Entrepreneurship

Credits 3

The role of the entrepreneur is examined in the conception, start-up, organization, and development of new independent businesses. New venture problems to be studied include identification of possible new products and services, evaluation of practical commercial potential, and development of a business plan, with attention to financing, operating, and marketing.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450, MANGT 220, MKTG 250

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ENTRP 466 - Digital Business

Credits 3

An in-depth study of how social media, mobile technologies and digital business tools have enabled new businesses development and existing business transformation. Five major, interrelated components: social computing, social media, content sharing, filtering, and Web applications will be explored within the context of business application and development.

Repeat for Credit

N

Typically Offered

Spring

ENTRP 497 - Topics in Entrepreneurship

Credits 1-3

Discussion and analysis of current issues in entrepreneurship, including topics related to new theory and the practice of entrepreneurship.

Repeat for Credit

Y

Typically Offered

On sufficient demand

ENTRP 520 - Social Entrepreneurship

Credits 3

Social entrepreneurship is one of the fastest growing disciplines to emerge in management and is increasingly getting recognition as an important policy strategy at the national level. It is concerned with how to engage the talents and tools of professional entrepreneurship to address critical social needs both within and beyond the market. Social entrepreneurship is situated within a framework of social institutions, organizations, and entrepreneurial change in response to human and citizen rights and needs. The relevant social institutions include government, the market, education, philanthropy, and the family. Organizations may be for profit or non-profit, but all organizations, regardless of their legal structure, are seen to have a social purpose. Several non-market venues for sustainable social change will be examined in addition to the traditional delivery of goods and services through the market. The course provides a number of crucial tools and resources that may better orient and equip the prospective social entrepreneur to identify and act on opportunities.

Repeat for Credit

N

Requisites

Prerequisite: ENTRP 340 or Junior standing.

Typically Offered

Spring

ENTRP 540 - Entrepreneurial Consulting

Credits 3

This course is designed to provide students and faculty in the Entrepreneurship program the opportunity to give business assistance to small firms in the University community.

Repeat for Credit

N

Requisites

Prerequisite: ENTRP 340 or Junior standing.

Typically Offered

Fall

ENTRP 575 - Entrepreneurship and Innovation Capstone**Credits 3**

Builds on previous coursework and other learning experiences to culminate in a final project that adds value to the learning experience.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing, Admitted to Entrepreneurship Major or Entrepreneurship Minor, Permission from the Entrepreneurship Center Director required.

Typically Offered

Fall, Spring, Summer

ENTRP 825 - Strategic Innovation**Credits 3**

Today's top companies succeed by making innovation a fundamental part of their strategy. As the pace of change continues to increase and the threat of disruption becomes the new normal, company leaders need to have a focused and effective approach to innovation. Students will be introduced to some of the core tools and strategies companies use to harness the innovative abilities, talents, and passion of their employees.

Repeat for Credit

N

Typically Offered

Fall

ENVD 189 - Introduction to University Honors Program**Credits 1**

Directions and goals for the honors program.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENVD 195 - CAT Community Connections**Credits 0**

Interdisciplinary course that explores the connections among two different fields, courses, or disciplines.

Repeat for Credit

N

Typically Offered

Fall

ENVD 200 - Student Success Seminar**Credits 1**

Provides students with strategies for creating success in college and life. Topics to be covered include accepting personal responsibility, motivation, academic self-management, self-awareness, and life balance.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENVD 201 - Environmental Design Studio I**Credits 4**

Foundation studies introducing principles, processes, and vocabularies of environmental design. Instruction in two and three dimensional visualization of objects and spaces. Instruction in the use of instrument-aided drawing,

freehand drawing, and model building to represent and communicate design ideas at different scales of observation.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the College of Architecture and Design or permission of the dean.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

ENVD 202 - Environmental Design Studio II

Credits 4

Foundation studies introducing principles, processes, and vocabularies of environmental design. Instruction in two and three dimensional visualization of objects and spaces. Instruction in the use of instrument-aided drawing, freehand drawing, and model building to represent and communicate design ideas at different scales of observation.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the College of Architecture and Design or permission of the dean.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

ENVD 203 - Survey of the Design, Planning and Community Development Professions

Credits 1

Overview of the environmental design professions. Comparative study of the working methods, and societal

and occupational roles of the architect, interior architect, industrial designer, landscape architect, planner, and community developer.

Repeat for Credit

N

Typically Offered

Fall

ENVD 204 - Studio Seminar

Credits 1

Seminar for students enrolled in ENVD 201. Topics related to studio and student success will be covered.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment in ENVD 201.

Typically Offered

Fall

ENVD 210 - Indian Art, Architecture and Culture

Credits 3

This course is designed to assist students in understanding India and its cultural, artistic, and architectural heritage so that students can develop a deeper understanding and appreciation for Indian culture, people and their way of life.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ENVD 240 - Design Drawing

Credits 2

This course offers an introduction to and sustained freehand drawing practice in fundamental drawing systems, methods

and media for the environmental design professions.

Repeat for Credit

N

Typically Offered

Fall, Spring

ENVD 250 - History of the Designed Environment I

Credits 3

An introduction to key ideas, practices, and works that have shaped global histories of the built environment through the mid-18th century.

Note

Three hours lecture per week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENVD 251 - History of the Designed Environment II

Credits 3

An introduction to key ideas, practices, and works that have shaped global histories of the built environment from the mid-18th century to the present.

Repeat for Credit

N

Requisites

Prerequisite: ENVD 250 or permission of instructor.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

ENVD 299 - Problems in Basic Design

Credits 1-18

A study of specified problems in elementary environmental design under the guidance of a member of the staff.

Note

Approval of associate dean.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENVD 400 - Undergraduate Research

Credits 0-3

Mentored undergraduate research in architecture, interior architecture and product design, landscape architecture or planning.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENVD 430 - K-State APDesign: APDPro

Credits 0

This course indicates and tracks which College of Architecture, Planning & Design students complete the APDPro requirements for each year.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ENVD 650 - Italian, Art, History and Culture

Credits 3

The course provides a synthesis of art, history, design and culture in the context of the Italian Peninsula and the Mediterranean region over time. Integration of material covered in lectures with field trips in Italy is expected.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

ENVD 654 - Education Abroad Orientation

Credits .5-1

Preparation for participation in study abroad with a focus on specific information pertaining to the design professions and the analysis of the built and natural environment.

Repeat for Credit
N

Typically Offered
Fall

ENVD 655 - International Field Study

Credits 3

Group observation of design precedents (ancient to present day) of a selected region, conducted in situ, to study significant aspects of environment, culture, and technology as expressed in vernacular and designed environments.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

ENVD 699 - Problems in Environmental Design

Credits 0-18

A study of specific environmental design problems under the direction of a member(s) of the departmental staff.

Repeat for Credit
Y

Requisites
Prerequisite: Junior standing; approval of associate dean.

Typically Offered
Fall, Spring, Summer

ENVD 899 - Problems in Environmental Design & Planning

Credits 1-4

This course is intended to provide students an opportunity to focus on specific problems in environmental design and planning under the guidance of a member of the college's graduate faculty.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

ENVD 900 - Conceptual Approaches to Design and Planning

Credits 3

Overview of contributions and limitations of various theoretical perspectives that inform the field of design and planning inquiry. Knowledge and theory construction. Nature, scope, and merits of scientific approach. Criticism of the scientific approach and examination of alternative approaches utilized in design and planning research and practice. Linking philosophy, research, and action/practice/application.

Repeat for Credit
Y

Typically Offered
Fall, Spring

ENVD 901 - Research Methods in Design and Planning

Credits 3

Survey of research methods in the fields of design and planning, including overall systems of inquiry, criteria for assessing quality, strategies and tactics. Strengths and weaknesses of various research designs. Methods covered include experimental and quasi-experimental research, correlational research, qualitative research strategies, simulation and modeling research, action research and design intervention, case study, and combined strategies.

Repeat for Credit
Y

Typically Offered

Fall, Spring

ENVD 999 - Dissertation Research

Credits 0-18

For students who have completed all credit hour, full-time enrollment, preliminary examination, and residency requirements for the doctoral degree, and are writing and defending their dissertations.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ENVE 101 - Introduction to Environmental Engineering

Credits 1

Introduction to discipline, department, university, and profession. Exploration of career options. Gain skills through application-oriented problem solving.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

BAE 101

ENVE 331 - Professional Practice for Environmental Engineering Design

Credits 1

A preparatory course for ENVE Senior Design class. Topics will include professionalism, project management, intellectual property, organizational behavior and ethics. Students will explore potential design project ideas, build design teams, and chose a project to complete for senior design in the following semester.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

BAE 331

ENVE 363 - Environmental Engineering Fundamentals

Credits 3

Basic physical, chemical, and biological concepts and the applications to the protection of the environment with emphasis on techniques used in water and wastewater treatment.

Note

Two hours rec. and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230 and MATH 222.

Typically Offered

Fall, Spring

Crosslisted

CE 563

ENVE 536 - Environmental Engineering Senior Design

Credits 3

Team-oriented capstone design laboratory with projects selected to address the design of equipment or systems to solve environmental engineering problems.

Repeat for Credit

N

Requisites

Prerequisite: ENVE 331

Typically Offered

Fall

ETA 020 - Engineering Technology Seminar

Credits 0

An introduction to university life and the skills necessary for personal and professional success after college. Activities include discussions, hands-on projects and opportunities to meet and learn from professionals. Topics explore the responsibilities of a college student and the benefits of a university education.

Note

Approximately 16 contact hours during the semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ETA 292 - Problems in Engineering Technology

Credits 1-18

Independent study in specific topics in engineering technology.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

ETB 102 - Electronics Seminar

Credits 3

An introductory seminar for students needing to further their education in the electronics area designed to provide basic hardware, software, and analytical skills necessary to be successful in their future course work related to electronics. Students will also be exposed to technology trends and standards of the electronic industry.

Note

2 hours lecture and 2 hours lab per week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ETB 292 - Advanced Problems in Engineering Technology

Credits 0-18

Advanced Problems in Engineering Technology

Repeat for Credit

N

Typically Offered

Other

ETB 310 - Applied Data Analysis and Tools

Credits 3

An introduction to numerical computing, data analysis, and visualization with emphasis on the use of software tools and programming to model, analyze, and solve a variety of science and engineering problems.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 205 or MATH 220

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ETB 352 - Microcontroller applications in Unmanned Systems

Credits 3

This course examines the hardware and software necessary to control Unmanned Systems. The students will learn how to interface microcontrollers to various sensors, actuators and communication devices. They will also learn the programming associated with these devices.

Repeat for Credit

N

Requisites

Prerequisite: ECET 101 and ECET 250

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ETB 420 - Unmanned Communication Circuits**Credits 3**

Communication electronics with applications in unmanned systems. Students will be exposed to mixed signal design circuits; RF circuits; and software defined radio (SDR) concepts that are key to the design modern radio systems.

Note

Two hours lecture and two lab hours.

Repeat for Credit

N

Requisites

Prerequisite: ECET 201 and ECET 250.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

ETB 480 - UAS Senior Design I**Credits 1**

Application of UAS principles and design methodology to solving a significant design problem in a team context. Includes determining customer requirements, exploring and choosing design alternatives, scheduling, and project management. Significant milestones are the project's conceptual, preliminary, and critical design reviews, which require written and oral presentations.

Note

Two hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: Instructor consent.

Typically Offered

Fall

ETB 481 - UAS Senior Design II**Credits 2**

A continuation of ETB 480. Includes the implementation, testing, and delivery of the project initiated in ETB 480 UAS Senior Design I. Significant milestones are the project prototype, design report, and final presentation.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ETB 480.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

ETB 482 - Senior Design Project I**Credits 1**

Application of engineering principles and design methodology to solve a significant design problem in a team context. Includes determining customer requirements, exploring and choosing design alternatives, scheduling, and project management. Significant milestones are the project's conceptual, preliminary, and critical design reviews, which require written and oral presentations.

Repeat for Credit

N

Requisites

Prerequisite: ECET 350, MET 382, and senior standing.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

ETB 483 - Senior Design Project II

Credits 1-3

A continuation of ETB 482. Includes the implementation, testing, and delivery of the project initiated in ETB 482 Senior Design I. Significant milestones are the project prototype, design report, and final presentation.

Note

Typically four hours lab a week when taken as 2 credit hours.

Repeat for Credit

N

Requisites

Prerequisite: ETB 482.

Typically Offered

Spring

ETB 492 - Advanced Problems in Engineering Technology

Credits 1-18

Advanced independent study in specific topics in engineering technology.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

FASH 200 - Introduction to Product Development

Credits 3

Fundamental knowledge and skills in fashion product development and garment construction. Focus on foundational techniques, terminology, methods and fashion industry standards.

Repeat for Credit

N

Typically Offered

Fall, Spring

FASH 245 - Fashion Industry

Credits 3

Survey of the organization and operation of the global fashion industry; examination of the principles and processes required to meet the needs of the apparel/textile consumer; particular emphasis on sustainability challenges and opportunities pertaining to the industry.

Repeat for Credit

N

Typically Offered

Fall

FASH 265 - Textiles

Credits 3

Fundamentals of textiles as related to the production, sale, and use of soft goods. Understanding of the environmental impacts of fiber, yarn, and fabric production. Identification of fibers, yarns, and fabrics. Care and performance of textile products.

Repeat for Credit

N

Typically Offered

Fall

FASH 300 - Fashion Production I

Credits 3

Fundamentals of fashion production using industrial equipment; fit and tech packs.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: FASH 200

Typically Offered

Fall

FASH 325 - Fashion Retailing

Credits 3

Introduction to the strategic role of retailing in the value chain; analyzing components, processes, and controls involved in managing a soft goods retailing organization while exploring the impetus for triple bottom line thinking in an industry transitioning toward sustainability.

Repeat for Credit

N

Requisites

Prerequisite: FASH 245 with a C or better.

Typically Offered

Spring

FASH 330 - Dress and Human Behavior

Credits 3

Cultural, social, psychological, and economic aspects related to dress and human behavior of individuals and groups; focus on market segmentation.

Recommended prerequisite: SOCIO 211 or PSYCH 110.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing; Recommended

Prerequisite: SOCIO 211 or PSYCH 110

Typically Offered

Fall

K-State 8

Social Sciences

FASH 340 - Fashion Aesthetics

Credits 3

Understanding and application of aesthetics as it relates to the roles of the fashion industry professional and the

development, selection, and promotion of fashion products.

Note

Lecture only.

Repeat for Credit

N

Requisites

Recommended co-requisite: FASH 245.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

FASH 375 - Digital Fashion Communications

Credits 3

Studies in computer-based advertising and promotional strategies for the fashion industry. Students will apply skills to graphic presentation and current industry technologies.

Repeat for Credit

N

Requisites

Prerequisite: FASH 340 with a C or better.

Typically Offered

Spring

FASH 400 - Fashion Illustration and Flats

Credits 3

Fashion rendering by hand; technical flats and digital presentation using Adobe Illustrator.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Instructor permission. Recommended prerequisite: ART 180.

Typically Offered

Spring

FASH 410 - Fashion Production II

Credits 3

Intermediate level fashion production using industrial equipment; fit and use of challenging fabrics.

Repeat for Credit

N

Requisites

Prerequisite: FASH 300 with a C or better.

Typically Offered

Spring

FASH 430 - History of Fashion

Credits 3

Interrelationship of fashion and social, cultural, political, and economic environments from the 1800s to present day.

Repeat for Credit

N

Requisites

Recommended Foundation Course: ART 196

Typically Offered

Fall

K-State 8

Historical Perspectives

FASH 445 - Professional Development

Credits 3

Preparation for internship and professional development in the fashion industry.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and FASH 375 with a C or better or FASH 400 with a C or better.

Typically Offered

Fall

FASH 450 - Showcase of Excellence Event Planning

Credits 3

Planning, promotion, and production of a fashion runway event and static exhibit.

Repeat for Credit

Y

Requisites

Prerequisite: Instructor permission required.

Typically Offered

Spring

FASH 460 - Soft Goods Evaluation

Credits 3

Identification and evaluation of soft goods product quality and serviceability from the standpoint of fiber, fabric, and construction performance, material and product standards and specifications, and cost.

Note

Two hours lecture and 2 hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: FASH 265 with a C or better and IDFS 350 with a C or better.

Typically Offered

Spring

FASH 465 - Product Development for Circular Fashion

Credits 3

Sustainable soft goods product development. Focus on development of textile related products and services (clothing, footwear, accessories, home goods, etc.) for the circular economy, from concept to consumer.

Repeat for Credit

N

Requisites

Prerequisite: FASH 265 with a C or better; IDFS 350 with a C or better

Typically Offered
Spring

FASH 476 - Merchandise Math and Buying Concepts

Credits 3

Introduction to the processes and methods used by fashion and retail buyers to plan and purchase merchandise. Application of fashion theory, principles, and sources of information in conducting market and consumer research. Forecasting economic trends in retailing and consumer buying behavior. Emphasis placed on merchandising mathematics, creating spreadsheets in Excel, and key industry terminology used by retail buyers.

Repeat for Credit
N

Requisites
Prerequisite: FASH 325 with a C or better; Corequisite: ACCTG 231

Typically Offered
Spring

FASH 498 - Topics in Fashion Studies

Credits 1-6

New content, technology or theory related to fashion studies.

Note
Consent of School

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

FASH 499 - Problems in Fashion Studies

Credits 1-8

Independent study.

Note

Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

FASH 550 - Fashion Internship

Credits 4

Pre-planned and supervised off-campus work experience in the fashion industry.

Repeat for Credit
N

Requisites
Prerequisite: FASH 445 with a C or better; FASH 655 with a C or better or FASH 575 with a C or better; junior standing; and instructor's permission.

Typically Offered
Summer

FASH 575 - Fashion Forecasting

Credits 3

Introduction of the processes and methods used by the fashion industry to conduct short-term and long-term forecasts. Application of fashion theory and principles, sources of information, knowledge, techniques and skills for planning and implementing fashion projection.

Repeat for Credit
N

Requisites
Prerequisite: FASH 340 with a C or better and FASH 430 with a C or better; and FASH 375 with a C or better or FASH 400 with a C or better.

Typically Offered
Spring

FASH 576 - Retail Finance and Merchandise Control

Credits 3

Introduction and application of fashion and soft

goods merchandise assortment
planning, forecasting operational expenses, vendor negotiations in merchandise purchases, retail profit planning, financial strategy, and economic sustainability. Emphasis on creating detailed spreadsheets in Excel.

Repeat for Credit
N

Requisites
Prerequisite: FASH 476 with a C or better; ACCTG 231 with a C or better.

Typically Offered
Fall

FASH 600 - Soft Goods Supply Chain Management

Credits 3

Analysis of global fiber, textile, and apparel production and distribution; structure of fashion industry and distribution channels; impact of culture, economics, and government regulations on production and distribution.

Recommend prerequisite: ECON 110 or ECON 120.

Repeat for Credit
N

Requisites
Prerequisite: FASH 245 with a C or better; Recommend Foundation Course: ECON 110 or ECON 120.

Typically Offered
Spring

K-State 8
Global Issues and Perspectives

FASH 610 - Computer-Aided Design of Fashion

Credits 3

Development and presentation of fashion and textile design using visual graphic software.

Note
Six hours lab a week.

Repeat for Credit
N

Requisites
Prerequisite: FASH 400 with a C or better.

Typically Offered
Fall

FASH 625 - Sustainable Fashion Business

Credits 4

Application of marketing principles to the fashion industry. Focus on development of marketing, promotional, and merchandising plans.

Repeat for Credit
N

Requisites
Prerequisite: FASH 576, with a C or better, and senior or graduate standing.

Typically Offered
Spring

FASH 650 - Fashion Studies Study Tour

Credits 1-3

Supervised off-campus tour of facilities or equivalent experience where softgoods products are designed, manufactured, tested, marketed, exhibited, and/or conserved.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

FASH 655 - Flat Pattern

Credits 3

Fashion design through flat pattern methods.

Note
Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: FASH 400 with a C or better and FASH 410 with a C or better.

Typically Offered

Spring

FASH 670 - Pre-Production Technologies**Credits 3**

Computer applications in 2D for pattern drafting, grading, marker, and tech packs; 3D visualization and evaluation.

Note

Eight hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: FASH 655 with a C or better.

Typically Offered

Fall

FASH 680 - Sustainable Fashion and Color**Credits 3**

Sustainable fashion design and coloration strategies, systems, and standards; coloration of textiles with natural dye and sustainable methods.

Repeat for Credit

N

Typically Offered

Fall

FASH 700 - Foundations of Sustainability**Credits 3**

Introduction to principles and practices of sustainability. Examination of the challenges to environmental, social, and economic sustainability on both a global and soft goods industry scale. Exploration of innovative practices and social change strategies for furtherance of sustainability.

Repeat for Credit

N

Typically Offered

Spring

FASH 720 - Professional Advancement in Merchandising**Credits 3**

Analysis of leadership in a merchandising firm and how it affects organizational culture and change. Various leadership styles examined, and a personal leadership philosophy developed.

Repeat for Credit

N

Typically Offered

Summer

FASH 725 - Theory and Practice of Soft Goods Marketing and Distribution**Credits 3**

Theoretical and applied analysis of soft goods marketing and distribution strategies, with an emphasis on the effectiveness of a market-oriented approach for decision-making; assessment of environmental forces affecting strategic decisions by firms in the distribution channel; synthesis of past and present trends in order to forecast probably future patterns.

Repeat for Credit

N

Typically Offered

Spring

FASH 735 - Promotional Strategies in Merchandising**Credits 3**

Examination of promotional strategies and techniques used by merchandising firms, emphasizing cultural and global awareness, social responsibility, and ethical decision making.

Repeat for Credit

N

Typically Offered

Fall

FASH 740 - Merchandising Analytics**Credits 3**

Using quantitative data from the merchandising industry to support managerial decision making. Specifically, how to format and analyze Point of Sale (POS) and Enterprise Resource Planning (ERP) merchandising data with the goal of maximizing profitability. Applying analytical approaches to problem solving using Microsoft Excel. Strengthening decision making and analytical skills while providing new perspectives and approaches to apply quantitative techniques and methods to solve real-world merchandising problems.

Repeat for Credit

N

Typically Offered

Spring

FASH 805 - Practice-Based Research**Credits 3**

Examination and application of approaches for undertaking practice-based research in fashion studies.

Repeat for Credit

N

Typically Offered

On sufficient demand

FASH 810 - International Merchandise Management**Credits 3**

Comprehensive understanding of theory, practices, and trends in international merchandise management. Analysis of the global merchandising system and way goods are distributed to consumers in various countries.

Repeat for Credit

Y

Typically Offered

Fall

FASH 815 - Financial Merchandising Implications**Credits 3**

The advanced study of financial trends in the merchandising industries. Focus will be on the financial implications of recent advances in the field.

Repeat for Credit

Y

Typically Offered

Summer

FASH 825 - Strategic Planning for Sustainability**Credits 3**

Examination of the executive level planning process utilized to develop successful merchandising strategies; emphasis on the importance of a market orientation for building customer value and sustaining a competitive advantage.

Repeat for Credit

N

Requisites

Prerequisite: Instructor's Permission.

Typically Offered

Fall

FASH 830 - Fashion Behavior & Sustainability**Credits 3**

Evaluation of historical, sociological, psychological, economic, and theoretical underpinnings of fashion process, and examination of approaches fostering greater sustainable apparel consumption.

Repeat for Credit

Y

Typically Offered
On sufficient demand

FASH 840 - Product Development

Credits 3

Advanced study of issues and management strategies necessary to design and produce a competitively priced product. Examination of the role of globalization and rapidly changing technology on the development of a successful product.

Repeat for Credit
Y

Requisites
Prerequisite: Instructor permission.

Typically Offered
Fall

FASH 845 - Consumers in the Soft Goods Market

Credits 3

Analysis of consumers and their decision-making processes; examination of internal and external factors influencing evaluation and purchasing behavior in order to predict future consumption and purchasing patterns.

Repeat for Credit
Y

Typically Offered
Spring

FASH 850 - Research Methods in Fashion Studies

Credits 3

Research methods that address practical and theoretical issues involved in designing, conducting, and evaluating research.

Repeat for Credit
Y

Requisites
Prerequisite: A graduate-level course in statistics.

Typically Offered
Spring

FASH 855 - Readings in Fashion Studies

Credits 1-2

Directed reading and study of selected topics.

Repeat for Credit
Y

Requisites
Prerequisite: FASH 850.

Typically Offered
Fall, Spring, Summer

FASH 860 - Contemporary Topics in Fashion Studies

Credits 1-3

Selected contemporary topics related to fashion studies.

Repeat for Credit
Y

Requisites
Prerequisite: 8 hours of credit basic to field.

Typically Offered
On sufficient demand

FASH 870 - Problems in Fashion Studies

Credits 1-6

Independent study related to fashion studies.

Repeat for Credit
Y

Requisites
Prerequisite: Six hours credit basic to the field.

Typically Offered
Fall, Spring, Summer

FASH 875 - Practicum in Fashion Studies

Credits 1-6

Preplanned and supervised off-campus experience in business, industry, museums, government agencies, or the cooperative extension service.

Repeat for Credit

Y

Requisites

Prerequisite: Twelve hours in the field.

Typically Offered

Fall, Spring, Summer

FASH 896 - Project Report**Credits 1-3**

Research and written documentation for the M.S. Project Report option.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of major professor.

Typically Offered

Fall, Spring, Summer

FASH 897 - Project Exhibit**Credits 1-6**

Project development for creative-oriented M.S. Project Report option resulting in a body of original works to be exhibited on campus during the final semester of the student's program.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of major professor.

Typically Offered

Fall, Spring, Summer

FASH 899 - Master's Thesis Research**Credits 1-6**

Research and written documentation for the M.S. Thesis option.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of major professor.

Typically Offered

Fall, Spring, Summer

FASH 990 - Dissertation Proposal Seminar**Credits 1**

Presentation and discussion of proposals for dissertation research.

Repeat for Credit

Y

Requisites

Prerequisite: Six hours of statistics, three hours of research design or methods, and consent of major professor.

Typically Offered

Fall, Spring

FASH 995 - Grantsmanship and Publication**Credits 3**

Grant writing, identifying external funding, managing grants, preparing manuscripts for peer-reviewed publication, and preparing papers and poster for presentation at professional meetings.

Repeat for Credit

Y

Requisites

Prerequisite: FASH 850 or other research methods course.

Typically Offered

On sufficient demand

FASH 999 - Dissertation Research in Fashion Studies**Credits 1-12**

Research in fashion studies for the doctoral dissertation.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of major professor.

Typically Offered

Fall, Spring, Summer

FDSCI 100 - Special Topics in FDSCI**Credits 0-6**

Seminars of special interest. Will be offered upon sufficient demand in selected areas relating to food science.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 101 - Foundations in Food Science & Industry**Credits 1**

Introduction to the food science & industry programs, activities, resources, faculty and career opportunities.

Note

Required of all freshmen in food science & industry. One hour seminar a week.

Repeat for Credit

N

Requisites

Prerequisite: Freshman in FDSCI.

Typically Offered

Fall

FDSCI 202 - Introduction to Food Science**Credits 3**

This course is the beginning course in food science designed to acquaint the student with the breadth and scope

of the food industry and the role of science in the preservation, processing, and utilization of foods.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

FDSCI 230 - Food Science Problems**Credits 0-6**

Independent guided studies in any of the many fields associated with food science.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 301 - Transfer Foundations in FDSCI**Credits 0**

An overview of the Food Science and Industry undergraduate program, including its undergraduate degree requirements, activities, and resources.

Repeat for Credit

N

Requisites

prerequisite: FDSCI major

Typically Offered

Fall, Spring

FDSCI 305 - Fundamentals of Food Processing**Credits 3**

The study of basic unit operations such as thermal processing, separation, chilling and freezing, dehydration, and fermentation as applied to the processing of food products.

Note

Two hours lecture and two hours lab a week

Repeat for Credit

N

Requisites

Prerequisite: A course in chemistry.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FDSCI 310 - Food Science Professional Preparation

Credits 1

This course prepares students to pursue and be successful in food science careers. Students will develop professional resumes, identify internship and career opportunities, hone interviewing skills, examine standards of professionalism with respect to personal integrity and business ethics, and practice professional communication in oral and written formats.

Repeat for Credit

N

Requisites

Prerequisite: Open to Food Science majors with Sophomore Standing.

Typically Offered

Spring

FDSCI 330 - Food Science Problems

Credits 0-6

Independent guided studies in any of the many fields associated with food science.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 331 - Special Topics in Food Science

Credits 0-6

Topics of special interest. Will be offered upon sufficient demand in selected areas relating to food science.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 335 - Food Products Evaluation

Credits 2

Introduction to the sensory evaluation of food products, including basic sensory testing methods, with special emphasis on proper judging techniques for evaluating dairy products.

Note

Four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

FDSCI 500 - Food Science Seminar

Credits 1

Review of recent developments in the food science industry and in food science research. Food science literature and intradepartmental research will provide source material.

Note

Required of all food science undergraduates in agriculture.

Repeat for Credit

N

Typically Offered

Fall

FDSCI 501 - Food Chemistry**Credits 3**

An in-depth coverage of the chemical structures of major food components and the chemical reactions occurring during storage and processing.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: BIOCH 265 or CHM 350

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FDSCI 510 - Fruit and Vegetable Processing**Credits 2**

Fundamental fruit and vegetable processes and related unit operations including blanching, cooling, freezing, canning, irradiation, fermentation, pickling, drying, packaging in relation to quality, safety, and nutritional aspects of related products. Importance of raw material characteristics and storage conditions will be discussed in terms of post-harvest physiology of fruits and vegetables and different product types. Functionality of ingredients common in fruit and vegetable processing will also be introduced.

Note

A companion laboratory (FDSCI 511) is also offered but is not required.

Repeat for Credit

N

Requisites

Prerequisite: FDSCI 305 and MATH 205 or MATH 220

Typically Offered

Fall

FDSCI 511 - Fruit and Vegetable Processing Lab**Credits 1**

The lab component of FDSCI 510 Fruit and Vegetable Processing. The labs will demonstrate both industrial and lab scale applications of technologies, unit operations, quality measurements, and related processing calculations commonly used in fruit and vegetable processing.

Repeat for Credit

N

Requisites

Prerequisite OR Corequisite: FDSCI 510

Typically Offered

Fall

FDSCI 530 - Undergraduate Research in Food Science and Industry**Credits 0-3**

Mentored undergraduate research experience in food sciences.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

FDSCI 600 - Food Microbiology**Credits 2**

This course deals with the isolation, identification, enumeration, and characterization of bacteria, yeasts, molds and other microbes associated with foods and food processing. Effects of physical and chemical agents on micro-organisms will be studied. Microbiological problems in food spoilage, food preservation, food fermentation, and food-borne diseases will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255.

Typically Offered

Fall

FDSCI 601 - Food Microbiology Lab**Credits 2**

Laboratory procedures involving isolation, identification, enumeration, and characterization of bacteria, yeasts, molds and other microbes associated with foods and food processing.

Repeat for Credit

N

Requisites

Prerequisite: FDSCI 600 or concurrent enrollment.

Typically Offered

Fall

FDSCI 603 - Food Science Internship**Credits 0-6**

Supervised professional field experience in food science.

Note

Consent of supervising instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 625 - Food Analysis**Credits 3**

Analytical principles related to standards and regulations for food processing. Food analysis methods and techniques addressing proximate analysis, basic quantitative approaches and calculations, and some analytical instrumentation such as gas chromatography and HPLC.

Note

Offered in an online format only

Repeat for Credit

N

Requisites

Recommended Foundation Course: FDSCI 501

Typically Offered

Fall, Spring

FDSCI 627 - Chemical Methods of Food Analysis**Credits 2**

Methods for quantitative chemical analyses of foods products. Analytical techniques covered include proximate analysis, spectroscopy, chromatography, mass spectrometry and immunochemistry. The analyses will be related to standards and regulations for food processing.

Note

Three hours lecture and three hours lab a week. Meets during the first half of the semester.

Repeat for Credit

N

Requisites

Prerequisite: FDSCI 501

Typically Offered

Fall

FDSCI 628 - Physical Methods of Food Analysis**Credits 2**

Principles of physical methods of food analysis including techniques related to water activity, water content, color, soft materials, gel networks, interfacial phenomena and colloidal structure, texture, rheology, and vibrational spectroscopy.

Note

Three hours lecture and three hours lab a week. Meets during second half of semester.

Repeat for Credit

N

Requisites

Prerequisite: FDSCI 501

Typically Offered

Fall

FDSCI 630 - Food Science Problems**Credits 0-6**

Research or related work with others, or a literature search. Written reports are required. Any field of food science for which the student has adequate background.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 640 - Research and Development of Food Products**Credits 3**

Research and development of new food products, including idea generation; market screening; focus groups; prototype development; ingredient functionality and interactions; statistical designs; processing; packaging; scale-up; regulatory issues; labeling; physical, chemical, microbiological and sensory evaluations; quality control procedures; and food safety plans.

Note

Two hours lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: FDSCI 305 Recommended Foundation Course: FDSCI 501 and FDSCI 600

Typically Offered

Fall

FDSCI 660 - International Study Experience in Food Science**Credits 0-6**

Seminar and travel course designed to prepare students before the experience and for students to analyze, critique, and report their experiences of an international experience associated with study tours or short courses. Course will focus on appropriate oral and written documentation of the student learning objectives for course experience. The academic topics will vary with each international activity.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food**Credits 3**

A comprehensive study of the Hazard Analysis and Critical Control Point (HACCP) System and Preventive Controls for Human Food and their application in the meat and food industries. Students will meet the training requirements under USDA HACCP and the FDA Food Safety Modernization Act (FSMA) for food safety for human foods. The class is offered in person in the fall and online fall/spring.

Note

Three hours lecture and group activities per week. *Great Plains IDEA course

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing. Recommended Prerequisite: BIOL 198 and CHM 110.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

FDSCI 695 - Quality Assurance of Food Products

Credits 3

A comprehensive course covering all aspects of quality assurance practices in the food industry. Emphasis is placed on interrelations of food chemistry, microbiology, sanitation, processing, and laws and regulations.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: One course in microbiology.

Typically Offered

Spring

FDSCI 710 - Kosher and Halal Food Regulations**Credits 2**

This course is an introduction to the origin and application of Jewish and Muslim dietary laws and their application in commercial food production and processing with some coverage of home practices. Hebrew, Yiddish, and Arabic words and phrases will be presented and explained as they relate to kosher and halal food production, processing, and consumption. Religious festivals and customs, and the associated food products, will also be presented. Current food-related topics and issues in both the Jewish and Islam communities will be discussed. Food scientists should be aware of what constitutes a kosher or halal product and the importance of regulations dealing with the production and processing of these products.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing.

Typically Offered

Other

FDSCI 711 - Flavor Chemistry**Credits 3**

Covers the use and evaluation of flavor reactions and flavor chemicals used in food systems. The impact of fat,

carbohydrates, proteins, and texture on foods, as well as other key topics such as ingredient sources for flavorings, regulating agencies, analytical tools and instruments used by flavor chemists are presented.

Repeat for Credit

N

Requisites

Prerequisite: CHM 350 or CHM 530 or a course in Organic Chemistry. Recommended prerequisite: FDSCI 501 or a course in Food Chemistry.

Typically Offered

Fall, Spring

FDSCI 712 - Food Packaging**Credits 2**

Covers the functionality of different food packaging types, as well as the materials and technology used in new package development. Packaging concept types as well as the functionality of different materials are presented.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Summer

FDSCI 713 - Rapid Methods and Automation in Microbiology**Credits 2**

Rapid methods and automation is a dynamic area in applied microbiology dealing with the study of improved methods in the isolation, detection, characterization, and enumeration of microorganisms and their products in clinical, food, industrial, and environmental samples. The knowledge and techniques of this course are useful for students interested in medical, food, industrial, and environmental microbiology for early detection of beneficial as well as harmful microorganisms in their work.

Note

*Great Plains IDEA course

Repeat for Credit

N

Typically Offered

Intersession

FDSCI 720 - Reaction Kinetics in Foods

Credits 2

A comprehensive course covering the principles of reaction kinetics in food systems to make quantitative predictions about food quality and food safety, and optimize food processing conditions.

Repeat for Credit

N

Requisites

Prerequisite: MATH 205 or MATH 220. Recommended Foundation Courses: FDSCI 600 or FDSCI 501.

Typically Offered

Spring

FDSCI 721 - Reaction Kinetics in Foods Recitation

Credits 1

Recitation course covering the theories, case-studies, and exercise problems for the lecture course FDSCI 720, which needs to be taken concurrently.

Repeat for Credit

N

Requisites

Corequisite: FDSCI 720.

Typically Offered

Spring

FDSCI 725 - Food Analysis

Credits 3

Principles, methods, and techniques necessary for quantitative, instrumental, physical, and chemical analyses of food products. Analytical techniques covered include proximate analysis, spectroscopy, chromatography (GC, HPLC), mass spectrometry, water activity, color, texture, rheology and interfacial phenomena.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Student Standing Recommended Foundation Course: FDSCI 501

Typically Offered

Fall, Spring

FDSCI 727 - Chemical Methods of Food Analysis

Credits 2

Methods for quantitative chemical analyses of foods products. Analytical techniques covered include proximate analysis, spectroscopy, chromatography, mass spectrometry and immunochemistry. The analyses will be related to standards and regulations for food processing.

Note

Three hours lecture and three hours lab a week. Meets during the first half of the semester.

Repeat for Credit

N

Requisites

Recommended Foundation Course: FDSCI 501.

Typically Offered

Fall

FDSCI 728 - Physical Methods of Food Analysis

Credits 2

Principles of physical methods of food analysis including techniques related to water activity, water content, color, soft materials, gel networks, interfacial phenomena and colloidal structure, texture, rheology, and vibrational spectroscopy.

Note

One hour recitation, and three hours lab a week. Meets during second half of semester.

Repeat for Credit

N

Requisites

Recommended Foundation Course: FDSCI 501.

Typically Offered

Fall

FDSCI 730 - A Multidisciplinary Overview of Food Safety and Security

Credits 2

Multidisciplinary food safety and security perspectives provided by numerous subject matter experts. Topics include food safety policy, ag bioterrorism, border security, animal ID, food defense and site security, risk analysis, crisis communication, epidemiology, HACCP, and more.

Note

*Great Plains IDEA course

Repeat for Credit

N

Requisites

Prerequisite: A course in biology or chemistry.

Typically Offered

Fall, Spring, Summer

FDSCI 731 - Food Protection and Defense-- Essential Concepts

Credits 2

This course presents foundational concepts relevant to protecting the food supply from intentional contamination, including the nature of the food and agriculture system as a critical infrastructure, threats to food and agricultural systems, as well as concepts and strategies related to response and mitigation of food protection incidents.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

FDSCI 740 - Research and Development of Food Products

Credits 3

Research and development of new food products, including

idea generation; market screening; focus groups; prototype development; ingredient functionality and interactions; statistical designs; processing; packaging; scale-up; regulatory issues; labeling; physical, chemical, microbiological and sensory evaluations; quality control procedures; and food safety plans.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Student Standing Recommended Foundation Courses: FDSCI 600, and FDSCI 501 or 815.

Typically Offered

Fall

FDSCI 750 - Food Toxicants

Credits 2

Quantitation metabolism and mechanisms of action of major foodborne toxicants. Toxicant defense and control systems, risk analysis and assessment and application of food laws.

Note

*Great Plains IDEA course

Repeat for Credit

N

Requisites

Prerequisite: A course in biochemistry.

Typically Offered

Fall

FDSCI 751 - Food Laws and the Regulatory Process

Credits 2

History of the development of the current federal and state food regulations. Guidelines that govern the practice of regulating the wholesomeness of red meats, poultry, and eggs. Presentations by state and federal food regulators.

Note

*Great Plains IDEA course

Repeat for Credit

N

Requisites

Prerequisite: Three credits in food science coursework at 200 level or above.

Typically Offered

Fall, Summer

FDSCI 791 - Advanced Application of HACCP Principles**Credits 3**

Evaluation of control parameters and methodology at critical control points, validating and auditing the effectiveness of critical control points, critical limits, monitoring tools, corrective action procedures, recordkeeping and verification procedures in addressing biological, chemical, and physical hazards that may be present in food products.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: FDSCI 690. Recommended Prerequisite: BIOL 255.

Typically Offered

Spring-Odd Years

FDSCI 810 - Fermented Foods**Credits 2**

Application of the principles of microbiology to the understanding of the fermentation of various categories of foods. Chemical, biochemical and microbiological changes under controlled and uncontrolled conditions.

Note

*Great Plains IDEA course

Repeat for Credit

Y

Typically Offered

Spring-Even Years

FDSCI 811 - Food Fermentation**Credits 4**

Application of the principles of microbiology to the understanding of the fermentation of various categories of foods. Chemical, biochemical and microbiological changes under controlled and uncontrolled conditions.

Note

Two hours lecture and six hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: BIOL 255.

Typically Offered

Spring

FDSCI 815 - Advanced Food Chemistry**Credits 3**

Relationship of chemical composition to properties and to physical and chemical stability of foods. Chemical reactions will be covered extensively. Special attention will be given to dairy and poultry products, red meats, vegetables, and cereal grains.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521, BIOCH 522.

Typically Offered

Fall

FDSCI 820 - Advanced Food Microbiology & Biotechnology**Credits 2**

Principles of food biotechnology, including introduction of molecular biology and enzyme immobilization. Theory and concepts of current biotechnology trends as it relates to food safety and security issues.

Note

*Great Plains IDEA course

Repeat for Credit

Y

Requisites

Prerequisite: A course in food microbiology or general microbiology, and a course in biochemistry

Typically Offered

Fall-Odd Years

FDSCI 840 - Public Health Practice**Credits 3-6**

Supervised field experience in an international, state, local, or district health agency or other appropriate health agency.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor. DMP 840, FNDH 840, and KIN 840.

Typically Offered

Fall, Spring, Summer

Crosslisted

MPH 840

FDSCI 850 - Food Science Graduate Seminar**Credits 1**

This course is designed to provide students with experience in developing and delivering a scholarly presentation on a specific topic. The course will include instruction on how to properly design technical presentations for effective communication. Students will learn how to use visual aids such as transparencies, slides and multimedia projectors. At least one technical presentation will be required. One credit required for an M.S. degree and 2 credits for a Ph.D. Degree.

Repeat for Credit

Y

Typically Offered

Spring

FDSCI 898 - Master's Report in Food Science**Credits 1-2**

A written report of either research or problem work on a topic in the major field.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 899 - Master's Research in Food Science**Credits 1-18**

Research leading to the completion of a master's thesis.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 907 - Food Dispersions**Credits 2**

Laws and theorems applied to the formation, mechanization and stabilization of food dispersions: properties of food dispersions; food solids, gels, batters, emulsions and foams.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 815.

Typically Offered

Spring-Odd Years

FDSCI 915 - Food Toxicology**Credits 2**

This course deals with the study of occurrence, detection, and control of microbial toxins and chemical toxins in fresh

and processed foods. The genetics, physiology, and mechanisms of toxin production by microbial cells and the chemistry, formation, and interactions of chemical toxins with food systems during food processing will be addressed.

Note

Two hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: ASI 607 and ASI 715.

Typically Offered

Spring-Odd Years

FDSCI 961 - Graduate Problem in Food Science

Credits 1-6

In-depth study of a topic supervised by a member of the graduate faculty.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FDSCI 999 - Doctoral Research in Food Science

Credits 1-18

Research leading to the completion of a Ph.D. Degree.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FFM 100 - Foundations in Food and Feed Manufacturing

Credits 1

This online orientation course provides an introduction to the key instructors, facilities,

online platform and functionalities needed to be successful in completion of the food and feed manufacturing AAS degree. Students will explore the fundamentals of how to use available systems and to successfully communicate with their professors. In addition, this course is designed to increase the students' academic and personal success in college by providing them with the scholarly, personal, and life management tools needed to function effectively and complete their AAS degree.

Repeat for Credit

N

Typically Offered

Fall

FFM 110 - Introduction to Grain and Food Manufacturing Industries

Credits 1

This course provides an in-depth introduction to the structure and function of the grain and food manufacturing industries, focusing on their organization, key players, and market dynamics. Students will learn an overview of the operational processes, from raw material procurement to distribution, while also exploring the roles of major industry sectors such as grain elevators, grain milling, baking, and supply chain logistics. Emphasis will be placed on how different departments and functions collaborate to ensure efficient production and delivery. The course also highlights career paths, from entry-level roles to specialized positions, within these industries.

Repeat for Credit

N

Typically Offered

Fall

FFM 111 - Introduction to Feed and Pet Food Manufacturing Industries

Credits 1

This course provides an in-depth introduction to the structure and function of the feed and pet food manufacturing industries, focusing on their organization, key players, and market dynamics. Students will learn an overview of the operational processes, from raw material procurement to distribution, while also exploring the roles

of major industry sectors such as commercial feed mills, integrated feed mills, dry pet food, wet pet food, pet treats, and others. Emphasis will be placed on how different departments and functions collaborate to ensure efficient production and delivery of feed and pet food. The course also highlights career paths, from entry-level roles to specialized positions, within these industries.

Repeat for Credit

N

Typically Offered

Fall

FFM 120 - Ingredient Identification and Quality: Cereal Grains

Credits 1

This course teaches students the skills necessary to identify various types of cereal grains and assess their quality. Students will learn about key physical and chemical characteristics, as well as the factors that influence grain quality such as growing conditions, handling, and storage. The course includes practical instruction on grading, testing, and evaluating grains for food and feed production. By the end of the course, students will be able to recognize common cereal grains and determine their suitability for different applications based on quality standards.

Repeat for Credit

N

Typically Offered

Fall

FFM 121 - Ingredient Identification and Quality: Oil Seeds and Legumes

Credits 1

This course provides students with the knowledge and skills to identify various types of oilseeds and legumes and assess their quality. Students will explore the physical, chemical, and nutritional properties of these crops, along with the factors affecting their quality, such as cultivation, harvesting, and storage practices. The course offers practical instruction on grading, testing, and evaluating oilseeds and legumes for use in food and feed production. By the end of the course, students will be equipped to determine the quality and market value of oilseeds and legumes based on industry standards.

Repeat for Credit

N

Typically Offered

Fall

FFM 122 - Ingredient Identification and Quality: Co-products and Additives

Credits 1

This course introduces students to the identification and quality assessment of ingredient co-products and additives used in food and feed production. Students will learn about common co-products, such as bran and meal, and various additives, including preservatives, emulsifiers, and vitamins. The course covers the factors that impact the quality and functionality of these ingredients, with practical instruction on evaluating their suitability for specific applications. By the end of the course, students will be equipped to assess ingredient quality and understand their roles in enhancing product performance.

Repeat for Credit

N

Typically Offered

Fall

FFM 150 - Preparing Grains

Credits 1

This course provides an in-depth overview of the preparation of grains for the milling process, covering cleaning, conditioning, and handling techniques. Students will learn about grain characteristics, impurity removal, moisture adjustment, and the equipment used to prepare grains for efficient milling. The course emphasizes the importance of proper grain preparation to ensure optimal milling performance, product quality, and safety. By the end of the course, students will understand the critical steps involved in preparing grains for milling and their impact on final product outcomes.

Repeat for Credit

N

Typically Offered

Spring

FFM 151 - Milling Process

Credits 1

This course provides an overview of the key processing steps involved in the milling process, including grinding, sifting, purifying, and packaging. Students will learn about the equipment used at each stage, how grain is transformed into flour or other products, and the importance of process control for product quality and efficiency. The course emphasizes the integration of each step to optimize production and maintain consistency in the final product. By the end of the course, students will have a clear understanding of the entire milling workflow and the factors that influence process performance.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 150

Typically Offered

Spring

FFM 152 - Milling Specialty Grains**Credits 1**

This course offers an overview of the unique processing steps involved in milling specialty grains, such as quinoa, spelt, and buckwheat. Students will explore how these grains differ from conventional wheat in terms of cleaning, grinding, sifting, and handling, with an emphasis on the specialized equipment and techniques required. The course highlights the challenges and opportunities in maintaining quality, nutrition, and functionality during the milling of specialty grains. By the end of the course, students will understand the distinct processing methods needed to optimize production and ensure quality in specialty grain milling.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 151

Typically Offered

Spring

FFM 159 - Intro to Milling Practicum**Credits 1**

This hands-on course offers an applied learning experience in grain processing and flour milling, providing students with a practical overview of industry operations. Students will engage in activities such as grain cleaning, grinding, sifting, and flour quality testing, while learning about the equipment and processes involved in milling. The course emphasizes real-world problem-solving and process optimization within grain and flour milling facilities. By the end of the course, students will have gained valuable hands-on experience, preparing them for operational roles in grain processing and milling.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 150

Typically Offered

Fall

FFM 160 - Bakery Ingredients**Credits 1**

This course provides an overview of the role and function of both micro and macro ingredients in the baking process, including flours, sugars, fats, leavening agents, emulsifiers, and flavorings. Students will learn how these ingredients interact to influence dough development, texture, flavor, and shelf life in baked products. The course emphasizes the importance of ingredient selection, measurement accuracy, and the impact of ingredient quality on the final product. By the end of the course, students will understand how to optimize ingredient use to produce high-quality baked goods consistently.

Repeat for Credit

N

Typically Offered

Spring

FFM 161 - Bakery Processes**Credits 1**

This course provides a comprehensive overview of the production steps involved in the baking process, including mixing, proofing, baking, cooling, and packaging. Students will examine each stage of production, from ingredient preparation to final product assembly, with an emphasis on how these steps affect product quality and consistency. The

course covers best practices for optimizing each step to enhance efficiency and ensure product excellence. By the end of the course, students will have a thorough understanding of baking unit operations and the skills needed to manage and improve production processes.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 160

Typically Offered

Spring

FFM 162 - Bakery Products**Credits 1**

This course provides an overview of the diverse range of products produced in the baking industry, including bread, pastries, cakes, cookies, and specialized baked goods. Students will explore the characteristics, ingredients, and production techniques specific to each product category. The course emphasizes product differentiation, market trends, and the impact of formulation and processing on product quality. By the end of the course, students will have a broad understanding of the variety of baked goods and the factors influencing their production and success in the market.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 161

Typically Offered

Spring

FFM 169 - Intro to Baking Practicum**Credits 1**

This hands-on course provides an applied learning experience offering a comprehensive overview of the baking industry. Students will engage in practical activities such as mixing, baking, and quality testing, while learning about the equipment and processes used in commercial bakeries. The course emphasizes understanding ingredient functionality, production techniques, and troubleshooting common issues in bakery operations. By the end of the course, students will have gained real-world experience,

preparing them for technical and management roles in the baking industry.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 160

Typically Offered

Fall

FFM 170 - Feed Processing**Credits 1**

This course provides a comprehensive overview of the feed manufacturing process, focusing on process flow, equipment identification, and operational techniques. Students will learn about the key stages of feed production, from raw material intake to mixing, pelleting, and packaging, as well as the roles of various equipment used in each stage. The course includes practical insights into equipment operation, maintenance, and troubleshooting to ensure efficient and safe feed production. By the end of the course, students will understand the complete feed manufacturing process and be able to identify and operate essential machinery.

Repeat for Credit

N

Typically Offered

Spring

FFM 171 - Pet Food Processing**Credits 1**

This course provides an in-depth overview of the pet food manufacturing process, covering the production of dry food, wet food, canned food, and pet treats. Students will explore the process flow for each type of product, learning how raw materials are processed, formulated, and packaged, along with the identification and operation of key equipment used in each stage. The course emphasizes the technical aspects of machinery operation, maintenance, and quality control specific to pet food manufacturing. By the end of the course, students will have a comprehensive understanding of how different pet foods are produced and the equipment involved in their creation.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 170

Typically Offered

Spring

FFM 172 - Finished Feed and Pet Food Quality Assurance

Credits 1

This course offers an overview of quality assurance practices in the feed and pet food manufacturing processes, focusing on maintaining product safety, consistency, and regulatory compliance. Students will learn about key quality control measures, testing protocols, and industry standards for ingredient sourcing, production, and packaging. The course also covers the tools and technologies used to monitor and ensure product quality throughout the manufacturing process. By the end of the course, students will understand how quality assurance impacts the overall success and safety of feed and pet food products.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 171

Typically Offered

Spring

FFM 179 - Intro to Feed and Pet Food Practicum

Credits 1

This hands-on course offers an applied learning experience that provides an overview of feed manufacturing and pet food processing. Students will engage in practical activities such as ingredient handling, formulation, mixing, pelleting, extrusion, canning, and quality testing, while learning about the equipment and processes involved in both industries. The course emphasizes real-world problem-solving, production optimization, and maintaining product quality and safety. By the end of the course, students will have gained valuable experience in the operational aspects of feed and pet food manufacturing, preparing them for technical and managerial roles.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 172

Typically Offered

Fall

FFM 199 - Food and Feed Manufacturing Independent Study

Credits 0-6

Student-specific projects or independent guided studies in any of the many fields associated food and feed manufacturing.

Note

Department Consent Required

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FFM 200 - Topics in Food and Feed Manufacturing

Credits 0.5-6

Topics of special interest. Will be offered upon sufficient demand in selected areas relating to food and feed manufacturing.

Repeat for Credit

Y

Typically Offered

On sufficient demand

FFM 210 - Food and Feed Manufacturing Equipment Maintenance

Credits 1

This course introduces students to the fundamentals of equipment maintenance in food and feed manufacturing, focusing on routine upkeep, troubleshooting, and repair techniques. Students will learn about the types of equipment commonly used in the industry, as well as best

practices for maintaining operational efficiency and minimizing downtime. The course includes practical insights into preventive maintenance strategies and common issues that arise in equipment operations. By the end of the course, students will be equipped to implement effective maintenance programs and ensure the reliability of manufacturing equipment.

Repeat for Credit

N

Typically Offered

Fall

FFM 215 - Preventative and Predictive Maintenance: Milling Specific

Credits 1

This course focuses on developing equipment maintenance programs specifically for the grain and flour milling industries. Students will learn to design and implement maintenance schedules tailored to the unique demands of milling equipment, including preventive and predictive maintenance strategies. The course covers techniques for diagnosing common equipment issues and best practices for minimizing downtime and extending equipment life. By the end of the course, students will be prepared to create and manage effective maintenance programs that optimize performance and reliability in grain and flour milling operations.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 210

Typically Offered

Fall

FFM 216 - Maintenance Programs: Bakery Specific

Credits 1

This course provides an in-depth exploration of developing equipment maintenance programs tailored to the baking industry. Students will learn how to design and implement maintenance schedules for bakery equipment, including ovens, mixers, and packaging machines, with a focus on preventive and corrective measures. The course covers techniques for troubleshooting common issues, ensuring

compliance with industry standards, and optimizing equipment performance. By the end of the course, students will be equipped to create and manage maintenance programs that enhance the efficiency and longevity of bakery operations.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 210

Typically Offered

Fall

FFM 217 - Maintenance Programs: Feed and Pet Food Specific

Credits 1

This course focuses on developing equipment maintenance programs tailored specifically to feed and pet food manufacturing facilities. Students will learn to design and implement maintenance schedules for machinery used in processing, mixing, and packaging feed and pet food, emphasizing preventive and corrective maintenance strategies. The course includes practical training on diagnosing equipment issues, ensuring compliance with industry standards, and enhancing operational efficiency. By the end of the course, students will be adept at creating and managing maintenance programs that optimize the performance and reliability of equipment in feed and pet food manufacturing.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 210

Typically Offered

Fall

FFM 225 - Milling Equipment Maintenance Practicum

Credits 1

This hands-on course offers students practical experience in equipment maintenance programs specific to grain processing and flour milling facilities. Students will learn to perform routine inspections, preventive maintenance, and basic repairs on critical milling equipment, such as

conveyors, sifters, and grinders. The course emphasizes real-world problem-solving and the importance of maintaining equipment to minimize downtime and improve operational efficiency. By the end of the course, students will have gained valuable skills in managing maintenance programs, ensuring the reliability and longevity of equipment in grain and flour milling operations.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 215

Typically Offered

Fall

FFM 226 - Baking Equipment Maintenance Practicum

Credits 1

This hands-on course provides students with practical experience in developing and implementing equipment maintenance programs specific to baking facilities. Students will work with common bakery machinery, such as ovens and mixers, learning preventive maintenance techniques, troubleshooting methods, and basic repairs. The course focuses on maintaining operational efficiency, minimizing downtime, and ensuring equipment safety in a bakery setting. By the end of the course, students will have the skills needed to manage maintenance programs that enhance the performance and longevity of bakery equipment.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 216

Typically Offered

Fall

FFM 227 - Feed Equipment Maintenance Practicum

Credits 1

This hands-on course provides practical experience in developing and implementing equipment maintenance programs for feed manufacturing and pet food processing facilities. Students will work with machinery such as

mixers, extruders, conveyors, and packaging equipment, learning preventive maintenance, troubleshooting, and basic repair techniques. The course emphasizes maintaining equipment efficiency, minimizing downtime, and ensuring product safety and quality. By the end of the course, students will have gained the skills necessary to manage maintenance programs that optimize equipment performance in feed and pet food production.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 217

Typically Offered

Fall

FFM 250 - Advanced Food and Feed Manufacturing Management

Credits 1

This course offers a comprehensive overview of managing food and feed manufacturing facilities, with a focus on integrating statistical process controls and Lean Six Sigma methodologies. Students will learn how to apply statistical tools to monitor and improve production processes, as well as implement Lean Six Sigma principles to enhance efficiency and reduce waste. The course covers key management strategies for optimizing facility operations, ensuring product quality, and complying with industry regulations. By the end of the course, students will be equipped to manage manufacturing operations effectively, utilizing data-driven approaches and continuous improvement techniques.

Repeat for Credit

N

Requisites

FFM 152 or FFM 162 or FFM 172

Typically Offered

Spring

FFM 251 - Advanced Milling Management

Credits 1

This course provides an advanced exploration of management techniques specific to grain and flour milling facilities. Students will delve into sophisticated strategies

for optimizing milling processes, improving operational efficiency, and ensuring product quality. The course includes in-depth coverage of advanced technologies, process control systems, and management practices tailored to the unique challenges of the milling industry. By the end of the course, students will have the expertise to lead and manage grain and flour milling operations effectively, leveraging advanced management techniques to enhance productivity and sustainability.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 250

Typically Offered

Spring

FFM 252 - Advanced Milling Manufacturing Management Practicum

Credits 1

This hands-on course offers students practical experience in managing the day-to-day operations of grain milling and flour milling facilities. Students will engage in activities such as overseeing production processes, managing equipment, coordinating staff, and ensuring product quality and safety. The course emphasizes problem-solving, workflow optimization, and adherence to industry regulations to ensure efficient facility management. By the end of the course, students will be equipped with the skills to lead and manage a milling facility, balancing operational efficiency and product quality.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 251

Typically Offered

Spring

FFM 261 - Advanced Bakery Management

Credits 1

This course explores advanced management practices specific to bakery facilities, focusing on optimizing production processes, enhancing product quality, and integrating innovative technologies. Students will study

advanced techniques for managing bakery operations, including process control, and supply chain management. The course also covers methods and tools to improve production efficiency, performance, capability, profitability, and quality in a bakery operation. By the end of the course, students will be equipped with the skills to lead bakery facilities effectively, driving efficiency and maintaining high standards of product excellence.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 250

Typically Offered

Spring

FFM 262 - Advanced Baking Manufacturing Management Practicum

Credits 1

This hands-on course provides students with practical experience in managing the operations of a commercial baking facility. Students will engage in overseeing production processes, managing staff, maintaining equipment, and ensuring product quality and food safety. The course emphasizes process optimization, inventory control, and adherence to regulatory standards specific to the baking industry. By the end of the course, students will have the skills and knowledge to efficiently manage a baking facility, balancing operational demands with quality control.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 261

Typically Offered

Spring

FFM 271 - Advanced Feed and Pet Food Management

Credits 1

This course offers an advanced examination of management practices tailored for feed and pet food facilities, emphasizing strategies for optimizing production, ensuring quality control, and integrating cutting-edge

technologies. Students will explore advanced operational techniques, including automation, process optimization, and regulatory compliance specific to feed and pet food manufacturing. The course also covers strategic decision-making, resource management, and staff leadership to address the unique challenges of these industries. By the end of the course, students will possess the expertise to effectively manage feed and pet food facilities, driving operational excellence and innovation.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 250

Typically Offered

Spring

FFM 272 - Advanced Feed and Pet Food Manufacturing Management Practicum**Credits 1**

This hands-on course offers students practical experience in the daily operations of feed manufacturing and pet food processing facilities. Students will engage in activities such as overseeing production processes, managing ingredient handling, operating machinery, and ensuring product quality and safety. The course emphasizes workflow optimization, regulatory compliance, and the integration of food safety standards within the industry. By the end of the course, students will be prepared to manage and optimize operations in feed and pet food production facilities.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 271

Typically Offered

Spring

FFM 280 - Introduction to Food and Feed Safety**Credits 1**

This course introduces students in technical education to foundational concepts in food and feed safety, focusing on the identification and control of various hazards. Students will learn about the different types of hazards—physical,

chemical, and biological—and explore key biological and viral pathogens that can impact food and feed production. The course covers essential safety practices, regulatory standards, and methods for preventing contamination. By the end of the course, students will understand the importance of hazard identification and control in maintaining food and feed safety.

Repeat for Credit

N

Typically Offered

Spring

FFM 285 - Food Safety Principles in Milling and Baking**Credits 1**

This course provides a comprehensive overview of Hazard Analysis and Critical Control Points (HACCP), a systematic approach to food safety management for the milling and baking industries. Students will learn to identify potential hazards, establish critical control points, and implement monitoring procedures to ensure the safety of products. The course covers the seven principles of HACCP, risk assessment techniques, and compliance with industry regulations. By the end of the course, students will be equipped to develop, manage, and evaluate HACCP plans in food production environments.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 280

Typically Offered

Spring

FFM 287 - Advanced Feed and Pet Food Safety**Credits 1**

This course prepares students to become Preventive Control Qualified Individuals (PCQI), equipping them with the skills to develop and implement food safety plans in accordance with FDA regulations. Students will learn how to identify hazards, establish preventive controls, monitor processes, and ensure compliance with the Food Safety Modernization Act (FSMA). The course covers risk-based preventive controls, corrective actions, and verification

procedures. By the end of the course, students will be qualified to oversee and manage food safety systems in a variety of food production environments.

Repeat for Credit

N

Requisites

Prerequisite or Corequisite: FFM 280

Typically Offered

Spring

FINAN 250 - Personal Investing and Risk Management

Credits 3

Provides a framework for identifying, analyzing, and managing the lifetime financial risks faced by the average person. An overview of the types and mechanics of investment instruments, development of personal risk profiles and investment plans, asset allocation methods, diversifiable and non-diversifiable risk, and risk avoidance and hedging methods.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing and MATH 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

FINAN 301 - Sports Finance

Credits 3

This course explores the unique financial issues in collegiate athletics including scholarships, NIL, and professional contracts, and how financial markets and institutions interact with athletics. Topics include budgeting for scholarships, NIL, and professional contracts; capital markets, banking, risk management in college athletics; and finance in athletic careers.

Repeat for Credit

N

Typically Offered

Fall, Spring

FINAN 450 - Principles of Finance

Credits 3

Study of the basic principles of finance, including discounted cash flow analysis, risk-return tradeoff, asset pricing models, and financial and real asset valuation. Applications of these concepts to the firm's investment and financing decisions and performance analysis will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231.

Prerequisite or Corequisite: STAT 250, or STAT 225 or STAT 510 and ECON 110 or ECON 120 or AGECE 120.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

FINAN 451 - Introduction to Integrated Investment Management

Credits 3

This course provides a survey of the investment management industry. The course examines various aspects of the investment management industry including discussions of investment markets, products, companies, and strategies. The course also examines the business of investment management by surveying each of the functional areas of investment management industry: accounting, finance, management, and marketing. The course introduces students to the basics of investment management and the course provides a survey of the legal and ethical environments in the investment management industry.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

FINAN 460 - Insurance

Credits 3

A study of life, property, casualty, and health insurance from the purchaser's point of view with additional emphasis on the operation and contribution of the insurance industry.

Repeat for Credit

N

Requisites

Prerequisite: ECON 110.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

FINAN 490 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FINAN 498 - Problems in Finance

Credits 1-18

Internship program and selected projects appropriate to the student's program of study.

Note

Consent of department head based on background courses appropriate to the project selected.

Repeat for Credit

Y

Typically Offered

Fall

FINAN 500 - Investment Management Concepts

Credits 3

An introduction and study of the issues and skills involved in successful investment management. This course will survey the role of capital markets, the basics of fundamental and technical analysis, behavioral finance, the basic of financial statements, client development, and management skills necessary for investment management success.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450.

Typically Offered

Spring

FINAN 510 - Financial Institutions and Markets

Credits 3

An analysis of financial institutions and markets from a risk management point of view. The role of financial institutions in the marketplace, the determinants of interest rates, and the impact of inflation on asset returns will be examined. Risks in financial institutions will be analyzed and management of these risks will be emphasized.

Note

May be taken concurrent with FINAN 520.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450.

Typically Offered

Fall, Spring

FINAN 520 - Investments

Credits 3

An analysis of investment securities from the investor's point of view. Topics covered include the mechanics of investing in securities and market basics, the risk-return trade-off, asset pricing models, market efficiency, the valuation of securities, portfolio performance measurement, and an introduction to derivatives.

Note

May be taken concurrent with FINAN 510.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450.

Typically Offered

Fall, Spring

FINAN 531 - Commercial Banking

Credits 3

An application of financial management concepts to the liquidity management, investment portfolio analysis, capital budgeting, and capital structure decision-making process required by a commercial bank to perform effectively its financial intermediation role within the financial system's institutional, regulatory, and competitive environment.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 510 and FINAN 520.

Typically Offered

Spring

FINAN 552 - Real Estate

Credits 3

Principles and practices including legal, economic, and social implications from the viewpoint of the real estate practitioner, investor, and society.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

FINAN 555 - Finance Scholars Seminar

Credits 0

Weekly seminar for the students in the Kansas State University Finance Scholars Program

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

FINAN 560 - Concepts in Financial Technology

Credits 3

Introduces the most recent technological innovations which affect how capital market participants perform functions such as borrowing, lending, contracting, and transacting. These include blockchain for business, decision support systems, and innovations in marketplace lending

Repeat for Credit

N

Typically Offered

Fall

FINAN 561 - Finance for Entrepreneurs

Credits 3

A comprehensive set of knowledge and tools to start, run, and exit and entrepreneurial or small business. These tools include financial forecasting and business planning, financing operations and capital investments, evaluation of asset acquisitions, tax planning, short-term capital management, mergers/acquisitions, and evaluation of exit strategies.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450.

Typically Offered

Fall

FINAN 575 - Intermediate Finance**Credits 3**

An in-depth study of a firm's investment and financing decisions, firm performance measurement and financial planning for a business enterprise. Topics include financial statement analysis and forecasting, capital budgeting, risk considerations in capital budgeting, cost of capital, capital structure theory and practice, distribution policy, leasing and mergers and acquisitions.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 510 and FINAN 520.

Typically Offered

Fall, Spring

FINAN 620 - Fixed Income Securities and Markets**Credits 3**

Provides an overview of fixed income markets and conventions; the analytical underpinning of fixed income markets and securities; and fixed income derivatives.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 510 and FINAN 520

Typically Offered

Spring

FINAN 623 - Financial Modeling**Credits 3**

This course is designed to provide an in-depth knowledge

of the use of Excel for use in the corporate finance and equity valuation environment. Topics include: • Use of Excel • Developing Models in Excel • Developing functional understanding of how to use Excel.

Repeat for Credit

N

Requisites

Prerequisite: (FINAN 510 and FINAN 520) or FINAN 830.

Typically Offered

Fall, Spring

FINAN 643 - International Financial Management**Credits 3**

The international (cross-currency) aspects of financial management. Topics include currency markets and exchange rate determination, parity conditions, foreign exchange exposure and management, and valuation of international projects.

Repeat for Credit

N

Requisites

Prerequisite: (FINAN 510 and FINAN 520) or FINAN 815.

Typically Offered

Fall

FINAN 653 - Security and Portfolio Analysis**Credits 3**

The analysis and valuation of securities and the management of investment portfolios. Students analyze the composition of, make buy/sell recommendations for, and evaluate the performance of an actual portfolio.

Repeat for Credit

N

Requisites

Prerequisite: (FINAN 510 and FINAN 520) or FINAN 815.

Typically Offered

Fall, Spring

FINAN 654 - Derivative Securities and Markets

Credits 3

Structure and operation of markets for futures, swaps, options, synthetic options, and futures on options. Valuation of futures contracts and options. Applications of derivatives to hedging and speculating strategies.

Repeat for Credit

N

Requisites

Prerequisite: (FINAN 510 and FINAN 520) or FINAN 815.

Typically Offered

Spring

FINAN 655 - Advanced Portfolio Management

Credits 3

Provides students the background knowledge in portfolio management. This will include learning about: investment mix and policy, investment objectives, differing asset allocations for individuals and institutions, and balancing risk and performance.

Repeat for Credit

N

Requisites

Prerequisites: FINAN 510, FINAN 520, and acceptance to the Financial Analyst Track

Typically Offered

Fall

FINAN 661 - Professional Financial Planning

Credits 3

A study of the principles and practices of professional financial planning using an integrated planning model. Topics include the planning environment, concepts, tax management, asset acquisition and management, credit management, risk management, investments, retirement planning, and estate planning. Contemporary applications, professional opportunities, and legal/ethical standards are emphasized.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 510 and FINAN 520.

Typically Offered

Fall, Spring

FINAN 663 - Mergers and Acquisition

Credits 3

Presents the theories and empirical evidence on mergers, acquisitions, and restructuring, and analyzes the effects of various policy options on stock values of acquirer and target companies.

Repeat for Credit

N

Requisites

Prerequisites: FINAN 575, FINAN 623, and acceptance to Financial Analyst Track.

Typically Offered

Spring

FINAN 675 - Cases in Finance

Credits 3

Capstone course in finance utilizing real world cases to integrate and apply financial concepts and theories, with emphasis on analytical and written and oral communication skills.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 575, and senior level students admitted in a College of Business Administration degree track or graduate standing.

Typically Offered

Fall, Spring

FINAN 715 - Foundations of Finance

Credits 3

Advanced financial concepts and tools with emphasis on corporate valuation. Topics include risk and return,

valuation techniques, capital budgeting, capital structure, options and futures, real options, and financial risk management.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 810.

Typically Offered

Spring

FINAN 798 - Special Topics in Finance

Credits 1-9

Selected projects appropriate to the student's program of study.

Repeat for Credit

N

Typically Offered

Fall, Spring

FINAN 820 - Advanced International Financial Management

Credits 3

A study of the international dimensions of corporate financial management with an applied orientation.

Repeat for Credit

Y

Requisites

Prerequisite: FINAN 715.

Typically Offered

Spring

FINAN 830 - Financial Market Theory

Credits 3

Development and analysis of conceptual framework for understanding (1) the functions performed by financial markets and their associated institutional arrangements, and (2) the contractual claims in transferring savings among business, household, and government participants in the economic system.

Repeat for Credit

Y

Requisites

Prerequisite: FINAN 715 or (FINAN 450 and ACCTG 433)

Typically Offered

Fall

FINAN 840 - Entrepreneurial Finance

Credits 3

This course will provide potential entrepreneurs a sufficient knowledge of applied finance needed to start and run an entrepreneurial business. Concepts covered will include the basic paradigms of finance such as risk and portfolio diversification. Discussions of the accounting environment of a small business and how the financial conditions can be analyzed will also be included. Finally, the course will focus on the financial skills a beginning entrepreneur will need to know to operate a small business, such as valuation, short-term capital management, financing decisions, and the exit strategies available to such enterprises.

Repeat for Credit

Y

Requisites

Prerequisite: FINAN 815.

Typically Offered

On sufficient demand

FINAN 890 - Seminar in Finance

Credits 3

In-depth study of selected contemporary issues in finance.

Repeat for Credit

Y

Requisites

Prerequisite: FINAN 815.

Typically Offered

On sufficient demand

FINAN 898 - Advanced Problems in Finance

Credits 0-18

Independent study of selected advanced topic(s) in finance.

Note

Consent of department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 110 - Introduction to Public Health**Credits 3**

This is an introductory survey course designed to provide a history of public health, an overview of the five core disciplines (epidemiology, biostatistics, environmental health, social and behavioral health, and health policy and management), and information about career options in public health. Using these introductory materials as a foundation, students will investigate and analyze contemporary issues in public health such as bioterrorism, threats to the nation's food supply, the importance of health promoting behaviors in the prevention of disease, burden and distribution of infectious diseases on a global population, and the role of public health disaster preparedness and management.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

DMP 110, KIN 230

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

FNDH 115 - Introduction to Health and Nutrition Professions**Credits 3**

An interdisciplinary introductory course that covers foundational concepts needed by all health and nutrition professions. Topics include a healthcare system overview,

health services financing, interprofessional health care practice, professional licensure/credentialing/scope of practice, a survey of health professions, the intersection between healthcare and public health program/policy, and professional topics (ethics, interpersonal skills, cultural competency, critical thinking, and evidence-based practice).

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

FNDH 120 - Introduction to Athletic Training**Credits 2**

Introduction to athletic training for first year athletic training majors. Emphasis will be on sports medicine team, legal concerns, pre-participation physicals, basic principles of injury prevention, policies and procedures.

Note

Students must be concurrent enrolled in FNDH 121.

Repeat for Credit

N

Requisites

Prerequisite: Athletic training majors only, and concurrent enrollment in FNDH 121.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

FNDH 121 - Introduction to Athletic Training Lab**Credits 1**

Introduction to athletic training for first year athletic training majors. Students will be required to complete a competencies skill list with a passing grade. Clinical hours in the athletic training room will give the student the opportunity to use the knowledge, skills, and techniques learned in this course.

Note

The student must complete clinical hours that do not count toward their practicum requirements, but are required for application to the professional phase of the athletic training education program. Students must be concurrent enrolled in FNDH 120.

Repeat for Credit

N

Requisites

Prerequisite: Athletic training majors only, and concurrent enrollment in FNDH 120.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

FNDH 130 - Careers in Nutrition and Dietetics**Credits 1**

An introduction to career opportunities in the field of nutrition and dietetics with emphasis on academic preparation, acquisition of professional credentials, and career laddering. Guest speakers from various areas of professional practice will supplement lectures and student assignments.

Repeat for Credit

N

Typically Offered

Fall

FNDH 132 - Basic Nutrition**Credits 3**

Concepts of human nutrition applied to personal food choices and health.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FNDH 220 - Care and Prevention of Athletic Injuries**Credits 3**

Principles and practices of treatment, taping, and care of minor athletic injuries.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FNDH 252 - Personal Wellness**Credits 3**

Impact of the effect of personal actions on lifelong wellness. Practical methods of assessing, maintaining, and improving behaviors to reduce the risk of illness and disability. Emphasis on developing skills to make informed, responsible health decisions.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

FNDH 300 - Dietetics ServSafe Manager Certification**Credits 0**

Supports student completion of ServSafe Manager online certification exam (National Restaurant Association) which is required for enrollment in FNDH 342. Course is credit/no credit. Credit is earned by uploading ServSafe Manager certification card. Students will register and pay for the ServSafe online exam through the National

Restaurant Association <https://www.servsafe.com/>

Note

ServSafe Manager Certification is required for enrollment in FNDH 342.

Repeat for Credit

N

Requisites

Prerequisite: FNDH majors or instructor permission

Typically Offered

Fall, Spring, Summer

FNDH 301 - Food Trends, Legislation, and Regulation

Credits 3

Current trends in market forms, packaging, and utilization of various foods. Food laws, regulation, labeling, additives, and residues.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FNDH 311 - Health Promotion and Behavior

Credits 3

Designed to provide students with skills for application to health behavior and health promotion within public health settings. Emphasis on understanding health behavior theories and applying theories to health promotion efforts in public health.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230 OR FNDH 115.

Typically Offered

Spring

FNDH 313 - Science of Food

Credits 4

Chemical, physical, sensory, and nutritional properties of food related to processes used in food preparation.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FNDH 321 - Medical Documentation

Credits 2

This course is to prepare students with the knowledge of medical nomenclature related to human systems, diseases, and scientific concepts for applications of electronic medical documentation (Electronic Medical Records; EMR) and scientific communication.

Repeat for Credit

N

Typically Offered

Fall, Spring

FNDH 340 - Food and Health: Safety, Allergies and Intolerances

Credits 3

An overview of the food system as it relates to the field of dietetics, focusing on issues that impact the quality, safety, accessibility, and sustainability of food. The course includes the systems approach, food safety principles, food allergy/intolerances principles, food contamination, religious issues, and related government regulations. This course will cover the following topics: food safety, food allergies and intolerances, sustainability, religious and

cultural issues that affect food safety and health. Specific applications of these topics will be made for the dietetics profession (institutions, health care settings, grocery stores, etc.)

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Ethical Reasoning and Responsibility

FNDH 355 - Rehabilitation and Exercise Modification Techniques I

Credits 3

This course will cover the fundamental aspects of tactical strength and conditioning, and injury prevention techniques that occur during physical activity.

Repeat for Credit
Y

Requisites
Prerequisite: Instructor approval required.

Typically Offered
Fall, Spring

K-State 8
Natural and Physical Sciences

FNDH 400 - Human Nutrition

Credits 3

Nutrients, their function, metabolism, and relation to health and disease: the digestion, absorption, transport, utilization, and storage of nutrients in humans.

Repeat for Credit
N

Requisites
Prerequisite: CHM 110 and CHM 111 or CHM 210; BIOL 198.

Typically Offered
Spring

K-State 8
Empirical and Quantitative Reasoning
K-State 8 Tag 2
Natural and Physical Sciences

FNDH 442 - Management in Dietetics I

Credits 4

Application and principles of food production and management that evaluate the system from inputs through transformation to outputs. Includes aspects of planning, control, outcomes, safety, communication and decision making.

Note
Students are required to find a food production facility for lab work and need approval from the instructor prior to the first day of class. Students are required to pass the ServSafe Managers exam by the end of the first week in order to complete labs for the semester. Will spend approximately 2-4 hours per week in lab.

Repeat for Credit
N

Requisites
Corequisite: FNDH 313

Typically Offered
Fall, Spring

FNDH 450 - Nutritional Assessment

Credits 2

Methods of nutritional assessment in humans to evaluate dietary intake and body composition; use of biologic markers of human nutritional status.

Repeat for Credit
N

Requisites
Prerequisite: FNDH 132 and sophomore standing.

Typically Offered
Spring

K-State 8
Natural and Physical Sciences

FNDH 455 - Rehabilitation and Exercise Modification Techniques II

Credits 3

This course is designed to provide an academic platform to apply and enhance knowledge and skills in rehabilitation techniques for humans. Focus is on applying progressive resistive exercise programs for athletes who are engaged in reconditioning and rehabilitation programs.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 355.

Typically Offered

Summer

FNDH 490 - Practicum in Clinical Dietetics

Credits 2

Through a series of case studies and projects, this course introduces the student dietitian to the basics of the practice of clinical dietetics including review of the medical record, nutritional assessment and documentation of medical nutrition therapy in the medical record. Students gain practical experience by completing shadowing experiences with a dietitian in clinical practice.

Repeat for Credit

N

Typically Offered

Spring

FNDH 499 - Problems in Human Nutrition

Credits 1-18

Supervised individual project to study current topics or participation in research.

Repeat for Credit

Y

Requisites

Prerequisite: Six hours in FNDH and consent of instructor.

Typically Offered

Fall, Spring, Summer

FNDH 510 - Life Span Nutrition

Credits 2

Physiological and environmental influences on nutritional requirements; nutritional problems and eating patterns of age groups throughout the life cycle.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 400 and FNDH 450.

Typically Offered

Fall, Spring

FNDH 515 - Counseling Strategies in Dietetic Practice

Credits 3

Application of interviewing, counseling, and educational techniques in dietetics, including individual and group methods.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 450

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

FNDH 516 - Communication Competencies in Dietetics Practice

Credits 1

Assessment of audiences and development of effective food/nutrition messages in community settings.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 515 or concurrent enrollment.

Typically Offered

Spring, Summer

FNDH 517 - Communication Competencies in Dietetics Practicum**Credits 1**

Application of principles learned in HMD 516 Communication Competencies in Dietetics Practice to the development, implementation, and evaluation of a community project under the guidance of a community mentor.

Repeat for Credit

N

Requisites

Prerequisite: Admission into the coordinated program in dietetics; concurrent enrollment in FNDH 516 and FNDH 521.

Typically Offered

Fall, Spring, Summer

FNDH 519 - Introduction to Clinical Dietetics**Credits 1**

Preparation for entrance into the clinical supervised practice experience. Review of medical record content; current practice protocols in clinical dietetics; practice case studies.

Note

Four day workshop.

Repeat for Credit

N

Requisites

Prerequisite: Admission into the coordinated program in dietetics; concurrent enrollment in FNDH 521.

Typically Offered

Spring

FNDH 520 - Applied Clinical Dietetics**Credits 3**

Application of clinical nutrition principles through case studies, independent research, discussion, groups, and oral presentations. Case studies will focus on medical nutrition therapy and education of persons throughout the life cycle and nutrition intervention for individuals with multiple disease states in various healthcare settings.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the coordinated program in dietetics.

Typically Offered

Fall, Spring

FNDH 521 - Clinical Dietetic Practicum**Credits 8**

Supervised clinical/community experience in the nutritional care of patients/clients. Practicum experiences are arranged with participating healthcare facilities.

Repeat for Credit

N

Requisites

Prerequisite: Must be taken concurrent with FNDH 520.

Typically Offered

Fall, Spring

FNDH 530 - Nutrition Education in Extension**Credits 1**

The process of and strategies for providing nutrition education outreach to diverse community audiences, including those with limited resources.

Repeat for Credit

N

Requisites

Prerequisite: Any college-level nutrition course and junior or senior standing.

Typically Offered

Spring

FNDH 535 - Energy Balance

Credits 2

This course will cover metabolic principles as they relate to energy intake (diet) and expenditure (exercise). Specific topics will include: obesity, anorexia/bulimia, bioenergetics, substrate selection/regulation (especially exercise and diabetes), body composition; methodology to assess each; and metabolism related disease.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 400 or KIN 335 or concurrent enrollment in either.

Typically Offered

Fall

FNDH 540 - Nutrition Education and Program Planning

Credits 2

Education strategies for communicating evidence-based health information and planning strategies for developing community programs.

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing

Typically Offered

Fall, Spring

FNDH 542 - Management in Dietetics II

Credits 2

Discussion of principles used to manage resources in dietetics practice. Topics include financial management, human resources, technology, benchmarking, and quality assurance.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 442

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

FNDH 543 - Management in Dietetics III

Credits 2

Administration and leadership in dietetic practice. Discussion of current topics and their application to the various practice areas of dietetics.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 542

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

FNDH 551 - Evaluation of Athletic Injuries of the Extremities

Credits 3

This course is designed to familiarize the athletic training student with the principles of orthopedic assessment and to apply these principles to specific regions of the body. Knowledge gained in this course may be applicable to other individuals interested in health related professions which require systematic examination of the body.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 220 with a C or better. Corequisite: C or better in KIN 360, OR BIOL 441 and 442, OR 5 hours of anatomy and physiology.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning
K-State 8 Tag 2
Natural and Physical Sciences

FNDH 552 - Emergency Procedures and Evaluation of Core Athletic Injuries

Credits 3

Familiarize the athletic training student with the procedures of emergency management of athletic injuries and to apply these procedures both on the field and off the field. Familiarized with the principles of orthopedic and emergency medical assessment and to apply these principles to the core of the body. Knowledge gained may be applicable to other individuals interested in health related professions which require systematic examination of the body in emergency settings.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 220 with a B or better and a C or better in KIN 360, BIOL 340 and BIOL 442, or 8 hours of Anatomy and Physiology transfer credit.

Typically Offered

Spring

FNDH 553 - Pharmacology in Athletic Training

Credits 2

Study of medications commonly encountered in the practice of athletic training. Includes categories of drugs, generic and trade names of common drugs, the use, effects and precautions for common drugs and drug-interactions. Focuses on how various drugs affect the patient response to activity, exercise and other therapeutic interventions.

Repeat for Credit

N

Requisites

Prerequisite: C or better in KIN 360, BIOL 441 and BIOL 442 or 8 hours of Anatomy and Physiology transfer credit.

Typically Offered

Fall

FNDH 554 - General Medical Conditions in the Athlete

Credits 2

Recognition, evaluation, management, and prevention of the most common medical conditions that affect athletic participation. Emphasis placed on the appropriate history, physical exam, indications for referral, and treatment for each condition.

Repeat for Credit

N

Requisites

Prerequisite: C or better in KIN 360, BIOL 441 and BIOL 442, or 8 hours of Anatomy and Physiology transfer credit; FNDH 551 and FNDH 552.

Typically Offered

Fall, Spring

FNDH 555 - Therapeutic Modalities in Athletic Training

Credits 3

The theory and application of the various energy systems used in the treatment of athletic injuries. Practical experiences will be emphasized.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 551, FNDH 220 with a B or better. Corequisite: FNDH 552.

Typically Offered

Spring

FNDH 556 - Rehabilitation and Conditioning for Athletic Injuries

Credits 3

A study of applied rehabilitation and conditioning techniques used by athletic trainers.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 551.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FNDH 557 - Administration of Athletic Training Programs

Credits 3

A study of issues affecting athletic trainers in their roles as administrators in the areas of role delineation, budget designs, legal aspects of sport, facility design, and drug testing and drug education.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 556 and senior standing.

Typically Offered

Fall, Spring

FNDH 558 - Advanced Athletic Training Techniques

Credits 3

This course will provide a deeper application of athletic training techniques in specific orthopedic related areas. Students will have a hands-on and lab component as it relates to casting, bracing, Kinesiotaping, and manual therapy techniques. Upon completion of this course, students will be eligible to complete the certification examinations to obtain credentialing as an ASOP Orthopedic Physician Extender.

Note

The course will be conducted as a hands on lab and lecture. The primary focus is skill acquisition and application.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 551. Corequisite: FNDH 552.

Typically Offered

Spring

FNDH 561 - Management in Dietetics Practicum

Credits 8

Supervised practice experience in the application of management principles in foodservice operations or other dietetics practice settings.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to Coordinated Program; FNDH 560 or concurrent enrollment.

Typically Offered

Fall

FNDH 562 - Management in Dietetics Practicum Recitation

Credits 1

Focused discussion of significant occurrences during the supervised practice experience and the application of management principles in foodservice operations or other dietetic practice settings. Behavior-based assessment and progression is utilized to encourage self-development and entry-level competence in dietetics practice.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the Coordinated Program in Dietetics; concurrent enrollment in FNDH 561.

Typically Offered

Fall

FNDH 570 - Introduction to Research in Dietetics Practice

Credits 1

Introduction to basic research design in dietetics with application of the research to evidenced-based practice using the Evidence Analysis Library of the Academy of

Nutrition and Dietetics.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing or instructor permission.

Typically Offered

Spring, Summer

FNDH 575 - Research in Health Sciences

Credits 1

Provide initial instruction on how to locate, understand, and evaluate the research literature in the student's area of interest in health science. A range of health research methods will be covered, and studies about treatment effectiveness. Student learning outcomes will include various forms of communication.

Note

Required by all undergraduate FNDH students

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing.

Typically Offered

Fall, Spring

FNDH 583 - Practicum I in Athletic Training

Credits 1-4

A supervised, clinical experience at approved clinical settings. The athletic training student will apply principles taught in FNDH 220.

Note

Taken 2nd year, 1st semester.

Repeat for Credit

N

Requisites

Prerequisite: Instructor approval.

Typically Offered

Fall

FNDH 584 - Practicum II in Athletic Training

Credits 1-4

A supervised, clinical experience at approved clinical settings. The athletic training student will apply principles taught in the classroom and practiced in the lab throughout the curriculum program.

Note

Taken 2nd year, 2nd semester.

Repeat for Credit

N

Requisites

Prerequisite: Instructor approval.

Typically Offered

Spring

FNDH 585 - Practicum III in Athletic Training

Credits 1-4

A supervised clinical experience at approved clinical settings. The athletic training student will apply principles taught in the classroom and practiced in the lab throughout the curriculum program.

Note

Taken 3rd year, 1st semester.

Repeat for Credit

N

Requisites

Prerequisite: Instructor approval.

Typically Offered

Fall

FNDH 586 - Practicum IV in Athletic Training

Credits 1-4

A supervised, clinical experience at approved clinical settings. The athletic training student will apply principles taught in the classroom and practiced in the lab throughout the curriculum program.

Note

Taken 3rd year, 2nd semester.

Repeat for Credit

N

Requisites

Prerequisite: Instructor approval.

Typically Offered

Spring

FNDH 587 - Practicum V in Athletic Training**Credits 1-4**

A supervised, clinical experience at approved clinical settings. The athletic training student will apply principles taught in the classroom and practiced in the lab throughout the curriculum program.

Note

Taken 4th year, 1st semester.

Repeat for Credit

N

Requisites

Prerequisite: Instructor approval.

Typically Offered

Fall

FNDH 588 - Practicum VI in Athletic Training**Credits 1-4**

A supervised, clinical experience at approved clinical settings. The athletic training student will apply principles taught in the classroom and practiced in the lab throughout the curriculum program.

Note

Taken 4th year, 2nd semester.

Repeat for Credit

N

Requisites

Prerequisite: Instructor approval.

Typically Offered

Spring

FNDH 589 - Professional Preparation for Athletic Training**Credits 0-1**

This course will provide a comprehensive review of athletic training knowledge in specific domain areas. Students will have a seminar component to review and apply knowledge across the five domain areas of athletic training. The domain areas include: injury/illness prevention and wellness protection; clinical evaluation and diagnosis; immediate and emergency care; treatment and rehabilitation; organizational and professional health and well-being.

Repeat for Credit

Y

Requisites

Prerequisite: Senior standing

Typically Offered

Fall, Spring

FNDH 597 - Research Experience in Food, Nutrition, Dietetics and Health**Credits 0-3**

Exposure to and assisting with current research projects in Food, Nutrition, Dietetics and Health.

Note

Maximum of 3 credit hours applicable toward a degree. School consent.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 599 - Topics in Human Nutrition**Credits 1-3**

Topics in Human Nutrition

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and consent of instructor.

Typically Offered

On sufficient demand

FNDH 600 - Public Health Nutrition**Credits 3**

Public health nutrition issues for various segments of the population; nutritional components of community assessment; program planning and evaluation; and policy issues pertaining to the nutritional status of the population.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 450 or FNDH 400 and junior standing.

Typically Offered

Fall, Spring, Summer

FNDH 620 - Nutrient Metabolism**Credits 3**

Basic concepts of the mechanisms of actions, interactions, and the processes of cellular assimilation and utilization of nutrients in humans. Emphasis on the coordinated control of nutrient utilization among the major organs.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 400; BIOL 441 and BIOL 442 or KIN 360; and BIOCH 265 or BIOCH 521, or CHM 550 with concurrent enrollment in BIOCH 521.

Typically Offered

Fall

FNDH 631 - Clinical Nutrition I**Credits 3**

First course of a two semester study of the application of nutrition principles in disease; includes physiological basis of nutritional care, effects of disease on nutrient metabolism, medical nutrition therapy, in-class team diagnoses presentations, and nutrition counseling.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 450 and FNDH 400.

Typically Offered

Fall, Spring

FNDH 632 - Clinical Nutrition II**Credits 3**

Continuation of the application of nutrition principles in disease; includes physiological and biochemical basis of nutritional care, effects of disease on nutrient metabolism, medical nutrition therapy for critical care needs, standardized language in advanced professional nutrition diagnoses and care of selected diseases.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 620 and FNDH 631.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

FNDH 635 - Sports Nutrition**Credits 3**

The interrelationships among diet, nutrition, and performance. Topics covered include nutrient metabolism during exercise training and performance, nutrition and training periodization, demands of sport training, supplements and ergogenic aids, and nutrients of concern for athletes. There is a focus on athletes/sport, but topics also include normal exercising individuals who have goals related to weight loss, weight gain, or performance and competition.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 400 OR KIN 335 with a grade of C or higher; and KIN 360 OR BIOL 441 and 442

Typically Offered

Fall

FNDH 643 - Food Writing**Credits 3**

Understanding and appreciating how to communicate effectively in writing about food and food-related topics. Hands-on experience in research and writing for various audiences and types of publications.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200.

Typically Offered

Fall

FNDH 645 - Capstone in Dietetics**Credits 1**

Culminating experience for dietetic students with a focus on professional engagement, governance of dietetics profession, and professionalism including self-advocacy, civil debate, and advocacy for nutrition and dietetics policies.

Note

Restricted to dietetics majors accepted into the DPD or instructor permission

Repeat for Credit

N

Requisites

Prerequisite: Accepted into DPD or instructor permission

Typically Offered

Spring

FNDH 650 - Practicum in Food, Nutrition, Dietetics and Health**Credits 1-6**

Supervised professional field experience.

Note

School consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 653 - Pharmacology**Credits 3**

This course is designed to bring together the body of knowledge regarding the study of medications commonly encountered in the profession of athletic training. Includes categories of drugs, generic and trade names of common drugs, the use, effects and precautions for common drugs and drug-interactions. Focuses on how various drugs affect the patient response to activity, exercise and other therapeutic interventions.

Note

100% Lecture

Repeat for Credit

N

Requisites

Admission into the ATh Tr Program or Instructors Approval

Typically Offered

Fall

FNDH 654 - Pathophysiology and Clinical Evaluation**Credits 3**

Designed to bring together the body of knowledge regarding the manifestation, diagnosis, and treatment of human illness, disease, and injury and the resulting physiological responses that occur during the lifespan. Content will build on anatomy, physiology and chemistry content from previous courses.

Repeat for Credit

N

Requisites

Prerequisite: Anatomy & Physiology (5 credit hours completed) or equivalent; CHM 110/CHM 111 or CHM 210; Junior standing or Instructor Approval.

Typically Offered
Fall, Spring, Summer

FNDH 660 - Nutrition and Food Behavior

Credits 3

Focus on the physiological, environmental, cultural, and economic factors that influence the use of food. Identification of appropriate methodology to study these factors as well as programs to modify food behavior.

Repeat for Credit
N

Requisites
Prerequisite: PSYCH 110 or SOCIO 211 or ANTH 200; and FNDH 400.

Typically Offered
Fall-Even Years

FNDH 700 - Global Health and Nutrition

Credits 3

This course is designed to examine major global nutrition and health challenges, programs and policies. Students will become acquainted with the epidemiology of nutritional disease in developed and developing countries. Programs and resources available to combat malnutrition will be evaluated. It will help students analyze current and emerging global health priorities, including emerging infectious diseases, newer nutritional problems, health inequity, health systems reforms, and major global initiatives for disease prevention and health promotion. Designed for advanced undergraduate and graduate students in health related field, including biological or social sciences.

Repeat for Credit
N

Requisites
Prerequisite: Graduate level classification, or undergraduate student with instructor permission.

Typically Offered
Spring

FNDH 701 - Sensory Analysis

Credits 3

Sensory analysis of appearance, texture, aroma, flavor; physiology of sensory receptors; laboratory and consumer panels; and interpretation of data.

Repeat for Credit
N

Requisites
Prerequisite: One course in statistics required.

Typically Offered
Fall-Odd Years

FNDH 702 - Nutrition in Developing Countries

Credits 3

Nutritional problems in developing countries, including an analysis of factors which contribute to malnutrition, effects of undernutrition, methods for assessing nutritional status, and interventions to combat nutrition problems.

Repeat for Credit
N

Requisites
Prerequisite: FNDH 510.

Typically Offered
Fall

FNDH 703 - Food Across Cultures and Countries

Credits 3

Exploration of food across cultures in the US and the world with emphasis on the affects of geographic, social, economic, religious, and other issues.

Repeat for Credit
N

Requisites
Recommended prerequisite: Junior, Senior, or Graduate Standing.

Typically Offered
Spring

FNDH 706 - Nutritional Immunology

Credits 3

Principles and issues related to nutrition and immunology. Impact of nutrients and nutritional status on immune responses. Impact of disease states on nutritional status.

Repeat for Credit

N

Typically Offered

Fall-Even Years

FNDH 709 - Clinical Applications of Human Anatomy

Credits 3

To bring together the body of knowledge from human anatomy and biomechanics to the clinical application, palpations, and testing of human anatomy. Provides the opportunity to apply knowledge of anatomy to a structural level allowing for palpating, locating, and incorporating the findings into their diagnosis.

Repeat for Credit

N

Requisites

Pre-Requisite: Admission to the MS in Athletic Training; 8 hours of Anatomy and Physiology, KIN 360 OR BIOL 441 AND BIOL 442.

Typically Offered

Summer

FNDH 710 - Foundations of Patient Management

Credits 2

Introduction to the role of the athletic trainer in the healthcare system and contemporary healthcare competencies that support expected standards of care.

Repeat for Credit

N

Typically Offered

Summer

FNDH 718 - Physical Health and Aging

Credits 3

Focus is on the physiological theories of aging, the relationship between normal aging processes, and the major chronic and acute diseases of the elderly, and community health promotion/maintenance programs for older adults.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and senior standing.

Typically Offered

Spring-Odd Years

FNDH 720 - Administration of Health Care Organizations

Credits 3

Comprehensive review of current health care institutions and their response to the economic, social/ethical, political/legal, technological, and ecological environments.

Note

Three hours lecture.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

MPH 720

FNDH 726 - Nutrition and Wellness

Credits 3

Epidemiology and pathophysiology of chronic disease related to nutrition (e.g., obesity, cardiovascular disease, osteoporosis, hypertension, diabetes, cancer). Nutritional risk and protective factors will be examined as they relate to public health and individual nutrition.

Note

Only available to distance students seeking a Masters in Dietetics through the Great Plains Program.

Repeat for Credit

N

Requisites

Prerequisite: Course in basic nutrition and statistics at the undergraduate level.

Typically Offered

Spring

FNDH 729 - Nutritional Oncology**Credits 3**

Students will gain understanding of basic cancer biology and methodology used to study nutrition and cancer relationships. Using current research as a basis, the role of nutrition in specific cancers will be explored. Students will learn about sources of information for cancer prevention programs, and how to apply this information to clinical patient management.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the Masters in Dietetics program through the Great Plains Interactive Distance Education Alliance (GPIDEA).

Typically Offered

Spring-Even Years

FNDH 731 - Advanced Diabetes Management**Credits 3**

The course is designed for students to gain a comprehensive understanding of the classification, presentation, and diagnosis of diabetes and pre-diabetes. The course will explore etiology, pathophysiology, diagnostic tests, clinical management, chronic complications and co-morbidities, and emerging technologies.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 631 or RDN credential or approval of instructor.

Typically Offered

Summer

FNDH 735 - Advanced Energy Balance**Credits 3**

Lifestyle, metabolic, and endocrine factors affecting energy balance and the development of obesity. Research methods to assess and apply energy balance data will also be discussed.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 620 or FNDH 635.

Typically Offered

Spring-Even Years

FNDH 750 - Fundamentals of Public Health and Food Safety**Credits 3**

Organization and function of food inspection services; principles of disease transmission; diseases transmitted to humans through the food chain.

Repeat for Credit

N

Requisites

Recommended Prerequisite: One class in the microbiology field (BIOL 255 OR FDSCI 600) or instructor consent.

Typically Offered

Fall

FNDH 752 - Emergency Management in Athletic Training**Credits 3**

This course is designed to be a fast paced review of introduction to athletic training and care and prevention of athletic training injuries. This course will also bring together the body of knowledge regarding emergency management while applying it to the profession of athletic training.

Note

100% Lecture

Repeat for Credit

N

Requisites

Prerequisite: Admission into the MS Athletic Training Program or Instructors approval

Typically Offered

Summer

FNDH 755 - Clinical Applications of Neurological Function**Credits 3**

Scientific approach to advance knowledge related to the assessment of structured movement of the human body in relationship to neurological function and pathologies. Cognitive (knowledge), psychomotor (hands-on) learning, affective, and clinical/quantitative skills with a heavy emphasis on neuroanatomy to stress clinical application.

Repeat for Credit

N

Requisites

Prerequisite: Admission into the MS Athletic Training Program or Instructors approval

Typically Offered

Summer

FNDH 760 - Applied Dietetics**Credits 1-6**

Application of dietetics/nutrition principles through workshops, case studies, independent research, discussion, and simulation. Behavior-based assessment and progression is utilized to encourage self-development and entry-level competence in dietetics practice. A variety of practice areas will be covered.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment restricted to those in Dietetics Internship program; must be taken concurrently with FNDH 860 Dietetics Practicum

Typically Offered

Fall, Spring, Summer

FNDH 761 - Applied Management in Dietetics**Credits 3**

Application of management principles in foodservice operations or other dietetic practice settings through case studies, independent research, discussion, and projects. Behavior-based assessment and progression is utilized to encourage self-development and entry-level competence in dietetics practice. Includes focused discussion of significant occurrences during the Dietetic Internship experience.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment restricted to those in Dietetics Internship program. Corequisite: FNDH 860 Dietetics Practicum

Typically Offered

Fall

FNDH 762 - Applied Clinical Dietetics**Credits 2**

Application will focus on medical nutrition therapy and education of persons throughout the life cycle and nutrition intervention for individuals with multiple disease states in various healthcare settings. Behavior-based assessment and progression is utilized to encourage self-development and entry-level competence in dietetics practice. Includes focused discussion of significant occurrences during the Dietetic Internship experience.

Repeat for Credit

N

Requisites

Prerequisite: Enrollment restricted to those in Dietetics Internship program. Corequisite: FNDH 860 Dietetics Practicum

Typically Offered

Spring

FNDH 775 - Research in Health Sciences

Credits 3

Students in this graduate course will review the role and importance of the scientific method in health professions, especially those with clinical application. The rationale and role of evidence-based practice and research will be reviewed, and research language and core concepts will be discussed. Students will demonstrate their ability to ask research questions and translate questions into search strategies for finding evidence. The purpose of this course is to provide students the opportunity to demonstrate their capacity to locate, understand, and evaluate the research literature in the student's area of interest. The expectation is to demonstrate understanding of research methodology the ability to critically evaluate research literature. Students will demonstrate knowledge of quantitative and qualitative research methods, types of data, how data are described and how biostatistics are used to provide meaning to research data. A range of health research methods will be covered, and studies about treatment effectiveness (clinical trials and systematic reviews), as well as qualitative approaches will be discussed.

Repeat for Credit

N

Typically Offered

Spring

FNDH 780 - Problems in Food, Nutrition, Dietetics and Health**Credits 1-6**

Supervised individual project to study current issues.

Note

School consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 782 - Topics in Food Nutrition, Dietetics and Health**Credits 1-6**

Supervised individual project to study current issues.

Note

School consent

Repeat for Credit

Y

Typically Offered

On sufficient demand

FNDH 799 - Foundations of Therapeutic Interventions**Credits 3**

Provide students with the foundational knowledge of how to integrate the basic sciences, exercise physiology, biomechanical, and injury prevention strategies into a well-planned and evidence based patient care plan. Focused theory and application of therapeutic modalities, applied rehabilitation, and conditioning techniques used in the profession of athletic training.

Repeat for Credit

N

Typically Offered

Summer

FNDH 800 - Nutrition Education and Communication**Credits 3**

Apply principles of communication and learning technologies to nutrition education research and practice.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 510, FNDH 515, and a statistics course with a grade of C or better

Typically Offered

Spring

FNDH 802 - Clinical Therapeutic Interventions I- Functional Therapeutic Interventions**Credits 3**

Application of treatment strategies for return to activity,

strength and conditioning techniques and prescription, movement strategy and preventative care and ergonomic assessment. Use of biometrics, and physiological data for intervention prescription. This course is a study of applied rehabilitation and conditioning techniques used in the profession of athletic training.

Note

50% Lec, 50% Lab

Repeat for Credit

N

Requisites

Prerequisite: Admission into the AthTr Program or Instructors Approval

Typically Offered

Fall

FNDH 803 - Clinical Therapeutic Interventions II- Extremity Interventions

Credits 3

Theory and application of the various treatment strategies used in the treatment of the upper extremity and lower extremity.

Note

50% Lec, 50% Lab

Repeat for Credit

N

Requisites

Prerequisite: Admission into the AthTr Program or Instructors Approval

Typically Offered

Spring

FNDH 804 - Clinical Therapeutic Interventions III- Pharmacology, Nutrition, and Behavior Modification

Credits 2

Inform students of the basic principles pertaining to and the reasoning behind the inclusion of pharmacological agents and nutrition as part of a patient's holistic plan of care. Emphasis placed on the athletic trainer's role as educator and part of an interdisciplinary team to ensure behavior

modification and compliance.

Repeat for Credit

N

Typically Offered

Spring

FNDH 810 - Advanced Macronutrient Metabolism

Credits 5

Dietary, metabolic, and endocrine factors regulating food intake and selection, and the absorption, function, metabolism, and interrelationships of macronutrients under varying nutritional conditions, with emphasis on recent advances in macronutrient nutrition.

Repeat for Credit

Y

Requisites

Prerequisite: BIOCH 521 and FNDH 620.

Typically Offered

Fall-Even Years

FNDH 812 - Advanced Micronutrient Metabolism

Credits 3

Nutritional roles and metabolism of vitamins and minerals. Functions, biological availability, hormonal regulation, requirements, deficiency and toxicity signs, and interrelations with other nutrients.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 810.

Typically Offered

Spring-Odd Years

FNDH 815 - Molecular Basis of Nutrient Function

Credits 3

The course is designed to explore the role that certain nutrients have at the gene and molecular levels in terms of their mechanism of action. The physiological consequences of nutrient gene-interaction from a tissue, organ and organism level, as well as the subcellular levels, are to be considered.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 620 and BIOL 450.

Typically Offered

Spring

FNDH 820 - Functional Foods for Chronic Disease Prevention

Credits 3

Integrate and evaluate the regulatory principles, food science, nutrient science and nutritional metabolism for the development of functional foods, nutraceuticals, and dietary supplements for chronic disease prevention.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 400, FNDH 313, BIOCH 521.

Typically Offered

Spring-Even Years

FNDH 821 - Clinical Evaluation I-Core Evaluation

Credits 3

Application of clinical and functional injury evaluation procedures and techniques for the trunk, torso, abdomen, spine, and kinetic chain.

Note

50% Lec, 50% Lab

Repeat for Credit

N

Requisites

Prerequisite: Admission into the AthTr Program or Instructors Approval

Typically Offered

Fall

FNDH 822 - Clinical Evaluation II-Extremities

Credits 3

Application of contemporary principles and practices of patient examination for formulation of a diagnosis and plan of care for patients with health conditions of the extremities that are commonly seen in athletic training practice.

Note

50% Lec, 50% Lab

Repeat for Credit

N

Requisites

Prerequisite: Admission into the AthTr Program or Instructors Approval

Typically Offered

Spring

FNDH 823 - Clinical Evaluation III- General Medical Conditions

Credits 3

Meet outcomes and guidelines related to prevention, evaluation and management of medical conditions/disabilities. Obtain knowledge, skill and clinical decision-making to accurately assess and recognize general medical conditions, make appropriate referrals, and work as part of a health care team to implement plans for safe participation in physical activity and sport.

Repeat for Credit

N

Typically Offered

Summer

FNDH 838 - Advanced Clinical Dietetics

Credits 3

An in-depth study of the pathophysiology of nutritional disease. Those functional disorders which result in nutritional disease or those nutritional diseases which affect physiological function will be explored. The emphasis will

be in the following areas: nutritional assessment, endocrinology, metabolism, gastroenterology, and organ failure.

Note

Only available to distance students seeking a Masters in Dietetics through the Great Plains Program.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 630 or equivalent.

Typically Offered

Spring

FNDH 839 - Clinical Nutrition Support

Credits 3

Specialized nutrition assessment and support. Review of energy expenditure and substrate utilization in specific disease states. Current methods for the initiation and management of enteral and parenteral nutrition therapy including access, metabolic and mechanical complications. Evaluation of nutrition support methodology in selected disease states.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the Masters in Dietetics program through the Great Plains Interactive Distance Education Alliance (GPIDEA).

Typically Offered

Spring

FNDH 840 - Public Health Practice

Credits 3-6

Supervised field experience in an international, state, local, or district health agency or other appropriate health agency.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

Crosslisted

MPH 840

FNDH 842 - Advanced Nutrition: Nutrigenomics, Nutrigenetics, and Advanced Lipid Metabolism

Credits 3

Fundamentals as how the macronutrients; fat, carbohydrates and protein act to regulate gene expression(nutrigenetics) and how an individuals genotype may alter an individuals macronutrient requirements (nutrigenetics) and influence phenotype with respect to chronic disease and human health.

Note

Only available to distance students seeking a Masters in Dietetics through the Great Plains Program.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 620 or consent of instructor.

Typically Offered

Fall, Spring

FNDH 844 - Nutritional Epidemiology

Credits 3

Methods and issues involved in understanding and conducting studies on the relationship between human diet and disease.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 400 and STAT 702 or STAT 703.

Typically Offered

Spring-Even Years

FNDH 857 - Administration in Athletic Training

Credits 3

This course is designed to bring together the body of knowledge regarding organization and administration while applying it to the profession of athletic training.

Note

100% Lecture

Repeat for Credit

N

Requisites

Prerequisite: Admission into the AthTr Program or Instructors Approval

Typically Offered

Summer

FNDH 858 - Durable Medical Equipment and Casting**Credits 2**

Application of contemporary principles and practices of how to select, fabricate, and/or customize prophylactic, assistive, and restrictive devices, materials, and techniques for incorporation into the plan of care, including the Durable medical equipment, Orthotic devices, Taping, splinting, protective padding, and casting.

Note

50% Lec, 50% Lab

Repeat for Credit

N

Requisites

Prerequisite: Admission into the AthTr Program or Instructor Approval

Typically Offered

Fall

FNDH 859 - Nutrition: A Focus on Life Stages**Credits 3**

Nutritional needs throughout the life span including pregnancy, lactation, growth and aging. Approaches to nutrition education for different ages.

Note

Only available to distance students seeking a Masters in Dietetics through the Great Plains Program.

Repeat for Credit

Y

Requisites

Prerequisite: 3 hours undergraduate nutrition and 6 hours undergraduate natural sciences.

Typically Offered

Summer

FNDH 860 - Dietetics Practicum**Credits 1-6**

Application of dietetics/nutrition principles in a supervised practice experience within an approved setting. Practicum experiences are arranged with healthcare facilities, foodservice operations, private practice, community organizations, and other related partners.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment restricted to those in Dietetics Internship program.

Typically Offered

Fall, Spring, Summer

FNDH 862 - Maternal and Child Nutrition**Credits 3**

A critical examination of behavioral, physiological, and public health issues impacting dietary and nutritional factors that support normal growth and development. The course content focuses on the early stages of the life cycle: gestation, lactation, infancy, preschool, school age and adolescence. Topics include the fetal programming hypothesis, growth and nutritional requirements, breast and formula feeding of infants, infant weaning, and eating behaviors that lead to normal growth, growth faltering, and pediatric obesity.

Note

Only available to distance students seeking a Masters in Dietetics through the Great Plains Program.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 510 or equivalent.

Typically Offered

Summer

FNDH 875 - Pediatric Clinical Nutrition

Credits 3

The physiological, biochemical and nutritional aspects of disease processes relevant to infants and children up to 18 years of age. Medical nutrition therapy for a variety of medical conditions found in this Population will be discussed including inborn errors of metabolism, food hypersensitivity, obesity, and diseases of the major organ systems.

Note

Only available to distance students seeking a Masters in Dietetics through the Great Plains Program.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 631 Clinical Nutrition I and FNDH 632 Clinical Nutrition II or equivalent.

Typically Offered

Fall

FNDH 880 - Professional Communication in FNDH

Credits 1

Develop and deliver oral presentations, write for the profession, and communicate in a professional manner.

Repeat for Credit

Y

Typically Offered

Fall, Spring

FNDH 883 - Athletic Training Practicum I

Credits 1

Application of classroom principles in a supervised, clinical

experience within an approved clinical setting.

Note

100% Practicum.

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructors Approval

Typically Offered

Fall

FNDH 884 - Athletic Training Practicum II

Credits 1

Application of classroom principles in a supervised, clinical experience within an approved clinical setting.

Note

100% Practicum

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructor Approval

Typically Offered

Spring

FNDH 885 - Athletic Training Practicum III

Credits 1

Application of classroom principles in a supervised, clinical experience within an approved clinical setting.

Note

100% Practicum

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructor Approval

Typically Offered

Summer

FNDH 886 - Athletic Training Practicum IV**Credits 1**

Application of classroom principles in a supervised, clinical experience within an approved clinical setting.

Note

100% Practicum

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructor Approval

Typically Offered

Summer

FNDH 887 - Athletic Training Practicum V**Credits 4**

Application of classroom principles in a supervised, clinical experience within an approved clinical setting.

Note

100% Practicum

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructor Approval

Typically Offered

Fall

FNDH 888 - Athletic Training Practicum VI**Credits 4**

Application of classroom principles in a supervised, clinical experience within an approved clinical setting.

Note

100% Practicum

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructor Approval

Typically Offered

Spring

FNDH 889 - Research Experience in Athletic Training**Credits 1**

Evidence based research application for Athletic Training. To inform contemporary principles and clinical athletic training practices in a manner that uses evidence to inform clinical decisions.

Repeat for Credit

Y

Typically Offered

Fall

FNDH 891 - Environmental Scanning and Analysis of Current Issues in Dietetics**Credits 3**

Discussion of changes in the economic, social, ethical, political, legal, technological, and ecological environments in which dietitians practice. Implications of these changes for education, practice and research within the field with particular emphasis on the healthcare industry.

Repeat for Credit

Y

Typically Offered

Fall

FNDH 892 - Population Health in Sports Medicine**Credits 3**

An introduction for athletic trainers and other healthcare providers, to the benefits of using a population-based approach to injury and illness prevention as it relates to a physically active/athletic population and to explore

opportunities for partnering with public health professionals on these initiatives.

Note

100% Lec

Repeat for Credit

N

Requisites

Prerequisite: Admission into the Athletic Training Program or Instructor Approval

Typically Offered

Fall

FNDH 896 - Financial Management and Cost Control in Dietetics

Credits 3

This course provides an overview of the fundamental knowledge of financial management, managerial, accounting, and operational cost controls for dietetics professionals who work predominately in not-for-profit organizations. Topics include a review of managerial accounting concepts for not-for-profit organizations, value and risk analyses, budgeting, asset management franchising and management contracts, cost-volume-profit analyses, and operational applications for financial performance.

Repeat for Credit

N

Requisites

Prerequisite: A basic financial or managerial accounting course

Typically Offered

Summer

FNDH 897 - Applications in Food, Nutrition, Dietetics and Health

Credits 1-3

Independent study under supervision of graduate faculty member. Contact hours will meet Board of Regents guidelines for credit elected (1-3)

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 898 - Master's Report

Credits 0-18

Survey in depth of the literature.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 899 - Master's Thesis

Credits 1-8

Research in area of specialization.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FNDH 911 - Advanced Nutrition Topics: Contemporary Issues

Credits 1-3

Contemporary concerns in health and disease from an advanced nutrition perspective.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 810 or instructor consent

Typically Offered

On sufficient demand

FNDH 913 - Eating Behavior

Credits 2

Study of the theoretical and practical aspects of food choice. Impacts of social, economic, and political policies

on food choice and impacts to global issues by individual food choices.

Repeat for Credit

N

Requisites

Prerequisite: One graduate course in nutrition, food science or psychology

Typically Offered

Spring

FNDH 980 - Graduate Seminar in Food, Nutrition, Dietetics and Health

Credits 1

Advance the oral presentation and professional communication skills of Food, Nutrition, Dietetics and Health graduate students.

Repeat for Credit

Y

Requisites

Prerequisite: FNDH 880 Recommended Foundation: Successful completion of preliminary exam

Typically Offered

Spring

FNDH 995 - Grantsmanship and Publication

Credits 3

Grant writing, identifying external funding, managing grants, preparing manuscripts for peer-reviewed publication, and preparing papers and poster for presentation at professional meetings.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 720 or a graduate level research methods course.

Typically Offered

Fall-Even Years

FNDH 999 - Doctoral Research

Credits 1-18

Doctoral Research

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FOR 520 - Urban Forest Administration

Credits 3

This course is a study of urban and community forest administration. It considers the urban forest ecosystem involving an in-depth look at ownerships, composition, distribution, benefits, values, and administrative operation. The policies and politics of successful administration will be emphasized.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: FOR 510.

Typically Offered

Spring

FOR 741 - Forestry Problems

Credits 1-3

Work is offered in various fields of forestry.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FREN 001 - Orientation for Summer School Program

Credits 0

Orientation for Summer School Program

Repeat for Credit

N

Typically Offered

Spring

FREN 101 - French I (Elementary French I)

Credits 4

Develops basic language skills and cultural awareness to function in everyday situations in French-speaking communities, for students with little to no prior French experience. Conducted in French with practice in speaking, listening, reading, and writing.

Note

For students with no French experience, with a year of high school French, or with a semester of college French that was taken more than two years ago.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 102 - French II

Credits 4

Continuation of French I, completion of basic presentation of the structure of French. Emphasis on spoken language.

Repeat for Credit

N

Requisites

Recommended Prerequisite: FREN 101 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 103 - Accelerated Beginning French

Credits 5

Course covering material from French I and II in one semester. Listening, speaking, reading, and writing. Includes one hour lab per week in language laboratory or other language opportunities outside of class time.

Note

For students with one or two years of previous French instruction or advanced learners of other languages who desire a faster pace.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 201 - French III

Credits 3

Continuation of French II, presentation of more advanced elements of the French language. Emphasis on spoken language.

Repeat for Credit

N

Requisites

Recommended Prerequisite: FREN 102 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 301 - French IV

Credits 3

Continuation of French III, presentation of more advanced elements of the French language. Emphasis on spoken language.

Repeat for Credit

N

Requisites

Recommended Prerequisite: FREN 201 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 398 - Intermediate Studies in French**Credits 1-6**

Offered only to participants in study abroad programs.

Note

Prior consultation for approval is expected.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 501 - Readings in French**Credits 3**

Practice in reading a variety of literary, journalistic, and specialized texts.

Repeat for Credit

N

Requisites

Recommended Prerequisite: FREN 301 or equivalent.

Typically Offered

Fall or Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

FREN 503 - French Composition and Grammar**Credits 3**

Review in depth of the structure of the language. Intensive practice in written and conversational French.

Repeat for Credit

N

Requisites

Prerequisite: FREN 213 or equivalent.

Typically Offered

Other

FREN 512 - French/Francophone Cinema**Credits 3**

The course consists of readings, written assignments, viewing, and discussion of French or Francophone films.

Note

Must be taken in French for French credit.

Repeat for Credit

Y

Requisites

Prerequisite: FREN 301 or equivalent.

Typically Offered

Fall, Spring, Summer

FREN 514 - Contemporary France**Credits 3**

Introduction to French culture with special emphasis on social and historical developments since World War II.

Repeat for Credit

N

Requisites

Prerequisite: FREN 213 or equivalent.

Typically Offered

Other

FREN 515 - History of French Culture**Credits 3**

A Survey of French culture from the Middle Ages to the present, including but not limited to, developments in art and architecture, music, and literature.

Repeat for Credit

N

Requisites

Prerequisite: FREN 213 or equivalent.

Typically Offered

Other

FREN 517 - French for the Professions**Credits 3**

Development of French language skills useful in diverse professional situations including specialized terminology, conversation and discussion, and translation. May include agriculture, tourism, fashion, international relations, and business.

Repeat for Credit

N

Requisites

Recommended Prerequisite: FREN 301 or equivalent.

Typically Offered

Fall or Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

FREN 518 - French Conversation**Credits 3**

Practice in spoken French, with emphasis on idiomatic

expression. Course not open to students whose primary language is French and whose competence has been demonstrated in the language at this level.

Repeat for Credit

N

Requisites

Prerequisite: FREN 213 or equivalent.

Typically Offered

Other

FREN 519 - Special Studies in French**Credits 1-18**

Special Studies in French

Repeat for Credit

Y

Requisites

Prerequisite: FREN 213 or equivalent and consent of department head and instructor.

Typically Offered

Other

FREN 520 - Introduction to French Literature (19th Century to the Present)**Credits 3**

The reading and discussion of major works of French literature from the early nineteenth century to the present.

Repeat for Credit

N

Requisites

Prerequisite: FREN 516 or equivalent.

Typically Offered

Other

FREN 530 - Topics in French/Francophone Literature and Culture**Credits 3**

Provides the students the opportunity to investigate in detail

a particular theme or genre in French literature or culture.

Repeat for Credit

Y

Requisites

Prerequisite: At least one course taught in French at the 500 level.

Typically Offered

Other

FREN 580 - Discovering French Linguistics

Credits 3

Introduction to the fundamentals of linguistic analysis. Topics may include sound system, word and sentence formation, semantic and pragmatic meaning, application of linguistics to language acquisition theory and to pedagogy.

Repeat for Credit

N

Requisites

Recommended prerequisite: FREN 301 or equivalent.

Typically Offered

Fall or Spring

FREN 709 - Medieval French Literature

Credits 3

An introduction to literary forms, style, and the thought from the eleventh century to the fifteenth century in France. Readings in modern French in *Chanson de Roland*, *Chretien de Troyes*, *Roman de la Rose*, etc.

Repeat for Credit

N

Requisites

Prerequisite: FREN 520 or FREN 521 and one other 500 level course, or consent of instructor.

Typically Offered

Other

FREN 710 - Sixteenth-Century French Literature

Credits 3

Reading and discussion of selected prose and poetry of the French Renaissance.

Repeat for Credit

N

Requisites

Prerequisite: FREN 520 or FREN 521 and one other 500 level course, or consent of instructor.

Typically Offered

Fall

FREN 711 - Seventeenth-Century French Literature

Credits 3

Various literary forms of the French Baroque and Classical period. Reading of representative texts by Corneille, Pascal, Moliere, Racine, La Fontaine, and others.

Repeat for Credit

N

Requisites

Prerequisite: two 500 level courses, including FREN 520 or FREN 521 or with the consent of the instructor.

Typically Offered

Fall

FREN 713 - Eighteenth-Century French Literature

Credits 3

Critical study of the literature of the Enlightenment.

Repeat for Credit

N

Requisites

Prerequisite: FREN 520 or FREN 521 and one other 500 level course, or consent of instructor.

Typically Offered

Other

FREN 715 - 19th Century French Literature

Credits 3

Topics in French literature of 1800-1899 including developments in poetry, prose, and theater.

Repeat for Credit

N

Requisites

Recommended Prerequisite: One French course at the 500-level

Typically Offered

Fall or Spring

FREN 716 - Topics in Contemporary French Literature**Credits 3**

The study of major themes and trends in the novel, drama, and poetry since 1900 as reflected by major authors as Proust, Camus, Sarraute, and others. This is a topics course repeatable with a different topic.

Note

This is a topics course repeatable with a different topic.

Repeat for Credit

Y

Requisites

Prerequisite: Two 500-level courses, including FREN 520 or FREN 521 or with consent of the instructor.

Typically Offered

Fall

FREN 719 - Advanced Spoken and Written French**Credits 3**

An advanced, intensive study of French prose style. Introduction to the techniques of translation from English to French. Intensive practice in oral style and diction.

Repeat for Credit

N

Requisites

Prerequisite: FREN 520 or FREN 521 and one other 500 level course, or consent of instructor.

Typically Offered

Fall

FREN 720 - Seminar in French Literature and Culture**Credits 3**

A seminar with various topics centered on literature and culture.

Repeat for Credit

Y

Requisites

Prerequisite: FREN 520 or FREN 521 or with the consent of the instructor.

Typically Offered

Fall, Spring

FREN 721 - Francophone Literature and Culture**Credits 3**

The development of French colonial and postcolonial literature and culture with an emphasis on the twentieth and twenty-first centuries. Regional focus may vary from Quebecois, Caribbean, Sub-Saharan or North African literature and culture.

Note

Taught as a seminar.

Repeat for Credit

N

Requisites

Prerequisite: FREN 520 or FREN 521 and one other course at a 500 level.

Typically Offered

Fall, Spring

FREN 731 - Advanced French for Professions**Credits 3**

Advanced language necessary for adequate oral and written

expression in international business and diplomatic situations, including specialized terminology, conversation and discussion, and translation.

Repeat for Credit

N

Requisites

Recommended prerequisite: One FREN course at the 500-level

Typically Offered

Fall or Spring

FREN 743 - French Second Language Acquisition Culture and Literature

Credits 3

Analysis and interpretation of cultural resources and texts from French-speaking countries, with emphasis on the development of interpretive skills and materials, and their application to the French curriculum at all levels.

Repeat for Credit

N

Requisites

Recommended Foundation Course: One French course at the 500-level

Typically Offered

Fall or Spring

FREN 771 - Topics in French Translation

Credits 3

Analysis and practice in bi-directional translation [French-English-French] of a variety of texts from a number of genres, including literary texts. Discussion of professional opportunities for translators and interpreters. Development of personal portfolio.

Repeat for Credit

Y

Requisites

Recommended prerequisite: One French course at the 500-level

Typically Offered

Fall or Spring

FREN 780 - Topics in French Linguistics

Credits 3

Advanced topics in French linguistics. These may include introduction to the social history and internal structure of the French language, advanced phonetics, advanced grammar (word and sentence formation, semantic and pragmatic meaning), application of linguistics to language acquisition theory and to pedagogy.

Repeat for Credit

Y

Requisites

Recommended prerequisite: One French course at the 500-level

Typically Offered

Fall or Spring

FREN 799 - Problems in Modern Languages

Credits 1-18

Problems in Modern Languages

Repeat for Credit

Y

Requisites

Prerequisite: FREN 520 or FREN 521 and one other 500 level course, or consent of instructor.

Typically Offered

Other

FREN 898 - Master's Report

Credits 1-2

A written report of either research or problem work on a topic in the major field.

Note

Consult of major professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

FREN 899 - Research in Modern Languages

Credits 1-18

Research in Modern Languages

Repeat for Credit

Y

Typically Offered

Other

GEN 200 - Undergraduate Education Abroad

Credits 0-18

"Education abroad" is a **chance to pursue your college studies in a foreign country**. Students attend lectures or carry out research at a foreign university or through K-State's education-abroad program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GENAG 000 - Agriculture Scholars Program

Credits 0

For all undergraduate students in the College of Agriculture Scholars Program. Students should enroll every semester while active in the program.

Repeat for Credit

Y

Requisites

Prerequisite: Acceptance into the College of Agriculture Scholars Program.

Typically Offered

Fall, Spring

GENAG 020 - University Honors Program

Credits 0

All students participating in the University Honors Program and who are enrolled in the College of Agriculture must enroll each semester.

Repeat for Credit

Y

Requisites

Prerequisite: Acceptance into the University Honors Program.

Typically Offered

Fall, Spring

GENAG 101 - Ag Orientation

Credits 1

Objectives, organization, and procedures of the College of Agriculture and the university are studied. Historical developments and projected trends in agriculture and the application of basic sciences to agriculture are presented.

Note

Required of freshmen in General Agriculture.

Repeat for Credit

N

Typically Offered

Fall

GENAG 112 - Ag Pathway: Animal Science, Health and Related Industries

Credits 3

For completers of the Kansas Career Cluster Pathway in Agriculture, Food, and Natural Resources Career Cluster, Animal Science, Health and Related Industries

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

GENAG 113 - Ag Pathway: Diversified Agricultural Science

Credits 3

For completers of the Kansas Career Cluster Pathway in Agriculture, Food, and Natural Resources Career Cluster, Diversified Agricultural Science

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

GENAG 114 - Ag Pathway: Food Products and Processing Systems

Credits 3

For completers of the Kansas Career Cluster Pathway in Agriculture, Food, and Natural Resources Career Cluster, Food Products and Processing Systems

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

GENAG 115 - Ag Pathway: Natural Resources and Environmental Sustainability

Credits 3

For completers of the Kansas Career Cluster Pathway in Agriculture, Food, and Natural Resources Career Cluster, Natural Resources and Environmental Sustainability

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

GENAG 116 - Ag Pathway: Plant Science and Industry Operations

Credits 3

For completers of the Kansas Career Cluster Pathway in Agriculture, Food, and Natural Resources Career Cluster, Plant Science and Industry Operations

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

GENAG 189 - Introduction to the University Honors Program

Credits 1

Overview of the University Honors Program including directions, goals, and student requirements for completion of the program.

Repeat for Credit
N

Typically Offered
Fall, Spring

GENAG 199 - Independent Study in Agriculture

Credits 0-6

Student-specific projects or independent guided studies in agriculture.

Note
Departmental Consent

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

GENAG 200 - Topics in Agriculture

Credits 0-3

Selected issues in agriculture.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

GENAG 201 - Leadership for Agricultural Advocacy

Credits 1

This CAT Community "connector class" will help develop your advocacy skills for the agricultural industry by examining assumptions of advocacy and

leadership. Explore and engage agricultural issues from the perspective of multiple stakeholders and develop your skills in critical thinking, communication, and productive conflict. This class will be highly interactive and discussion-based. We will focus on current events and engage with industry leaders.

Repeat for Credit

N

Requisites

Prerequisite: Acceptance into the Leadership for Agricultural Advocacy CAT Community Corequisites: ASI 102 and LEAD 212

Typically Offered

Fall

GENAG 202 - Animal Agriculture in 2050

Credits 1

This CAT Community "connector class" will focus on issues and opportunities related to livestock production in the United States. Potential impacts of new technologies, new international competitors and markets, evolving consumer preferences and expectations, and societal concerns with animal agriculture will be examined. Paradigms that result in successful academic performance and meeting academic and career goals will also be discussed.

Note

Note: Livestock production experience is recommended.

Repeat for Credit

N

Requisites

Prerequisite: Acceptance into the Animal Agriculture in 2050 CAT Community. Corequisites: BIOL 198 and ASI 102

Typically Offered

Fall

GENAG 203 - The Need For Feed: Grain Science

Credits 1

This CAT Community "connector class" will address the fundamentals of grain science, while at the same time

gaining hands-on experience in K-State's modern laboratories, which include industrial scale flour mills, a feed production facility, and a bakery. It will also serve as an introduction to grains and their processing/utilization in food and non-food products, as well as exposure to career opportunities in grain and related industries.

Repeat for Credit

N

Requisites

Prerequisite: Acceptance into the Need for Feed: Grain Science CAT Community Corequisites: BIOL 198 and GRSC 101

Typically Offered

Fall

GENAG 210 - Human and Cultural Diversity in the Food and Agricultural Sciences

Credits 3

The purpose of this course is to introduce agriculture students to concepts of diversity by learning about cultural awareness, issues, and contributions made by different ethnic groups to the field of agriculture.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Historical Perspectives

GENAG 225 - Fundamentals of Global Food Systems Leadership

Credits 3

An interdisciplinary approach to the fundamental roles people, policies, and cultures play in the global food system enterprise as it relates to sustainable food production, processing, distribution, and availability. Students will explore complexities within self, others, and community related to leadership in the context of a rapidly increasing global population.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

DAS 225, LEAD 225

K-State 8

Global Issues and Perspectives

GENAG 325 - Uncertainty in Global Food Systems Leadership

Credits 3

Explore technical and adaptive elements of grand challenges across disciplines. This course addresses the impact of cultural identity, life experience, and world views on leadership relationships as it relates to privilege and inclusion in the context of global food systems. Students will consider elements of community-engaged work.

Repeat for Credit

N

Requisites

Prerequisite: GENAG 225 or LEAD 225 or DAS 225.

Typically Offered

Spring

Crosslisted

LEAD 325, DAS 325

K-State 8

Global Issues and Perspectives

GENAG 396 - Research Topic and Proposal Development

Credits 1

Undergraduate honors and scholars students learn the research process and identify and work with a faculty mentor to prepare an individual undergraduate research project proposal. Class presentations focus on strategies to identify and narrow a research topic, seek a research mentor, and develop a research proposal. Additional content will address common research methods, safety and compliance issues, and tips for persuasively presenting research results.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing or instructor permission.

Typically Offered

Fall, Spring

GENAG 399 - Agricultural Cooperative Education Experience

Credits 1-5

Integration of academic principles into supervised industry experience in agricultural related field.

Note

Department permission

Repeat for Credit

Y

Typically Offered

Fall, Spring

GENAG 425 - Global Food Systems Leadership in Action

Credits 3

In this capstone course, students will conduct a community-engaged global food systems leadership research/service project. Emphasis will be placed on data collection, analysis and dissemination to appropriate audiences. Additional emphases will be on ethical dimensions of leadership and individual exploration of careers and roles within global food systems.

Repeat for Credit

N

Requisites

Prerequisite: GENAG 325 or LEAD 325 or DAS 325.

Typically Offered

Fall

Crosslisted

LEAD 425

K-State 8

Global Issues and Perspectives

GENAG 450 - Citizenship and Ethics in Agriculture

Credits 3

The study of agriculture's relationship with society while encompassing ethics and personal development. Current controversial issues and multidimensional policy topics facing the agricultural industry will be explored with an emphasis on moral and philosophical debates. Issues regarding professional ethics and decision making will also be an emphasis.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered

On sufficient demand

GENAG 495 - Honors Seminar

Credits 1-3

Seminars treat topics relevant to students participating in the University Honors Program.

Repeat for Credit

N

Requisites

Prerequisite: Acceptance into the University Honors Program.

Typically Offered

Fall, Spring

GENAG 505 - Comparative Agriculture

Credits 1-4

A travel-study program which is intended to acquaint students with agriculture of other countries and other parts of the U.S. and how it differs from Midwest-Great Plains agriculture relative to climate, crops, soils, livestock practices, marketing, and cultural attitudes toward agriculture.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GENAG 515 - Honors/Scholars Project

Credits 0-1

Completion of an independent undergraduate research project or scholarly activity required for the University Honors Program or the College of Agriculture Scholars Program. Oral presentation and written report required. Taken during the semester when the project will be completed.

Note

Approved project proposal.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

GENAG 582 - Natural Resources/Environmental Science Project (NRES)

Credits 3

A comprehensive project in NRES. Requires integration of information and understanding acquired in NRES secondary major courses. Students must prepare and present written and oral reports.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: All writing and oral communications courses required for major. Prerequisite or corequisite: 15 hours of approved courses in NRES secondary major.

Typically Offered

Fall, Spring

Crosslisted

DAS 582 and DEN 582

GENAG 670 - Introduction to Agricultural Resources and Environmental Management**Credits 2**

Interdisciplinary, international study of agricultural and natural resource management sustainability. Discussion of agro-ecologic, economic, and social science perspectives; sustainability criteria; issues of scale and culture; disciplinary methods; and systems-level approaches. Applications to important natural resources and environmental management issues in Kansas, U.S., and in other countries.

Repeat for Credit

N

Typically Offered

Spring

GENAG 690 - Seminar in International Agriculture**Credits 1**

An in-depth study of international agriculture topics.

Note

One hour lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered

Spring

GENAG 780 - Current Topics in Agriculture**Credits 1-3**

Selected topics studied to provide an in-depth understanding of current agricultural issues.

Repeat for Credit

Y

Typically Offered

On sufficient demand

GENAG 812 - Managing Occupational and Agricultural Safety and Health**Credits 3**

Examines program management and leadership issues in occupational and agricultural safety and health. Topics include business aspects of safety and health, management functions, workforce involvement, program development, motivation and leadership, program evaluation, ethics of safety and health, responding to the needs of a diverse workforce, and innovative program management for changing economic and societal contexts.

Note

This is a distance course.

Repeat for Credit

N

Typically Offered

Fall

GENAG 870 - Capstone for Agricultural Resources and Environmental Management**Credits 1**

Interdisciplinary, international application of agro-ecologic, economic, social science, and sustainability concepts and methods to important agricultural, natural resources and environmental management issues in Kansas, U.S., and other countries.

Repeat for Credit

N

Typically Offered

Fall

GENBA 020 - University Honors Program**Credits 0**

All students participating in the University Honors Program and who are enrolled in the College of Business Administration must enroll each semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

GENBA 105 - Business Orientation**Credits 0-1**

A general orientation to the College of Business Administration and university, academic planning, advising and enrollment processes.

Note

Required for all students in the College of Business in their first semester in the College of Business Program.

Repeat for Credit

N

Typically Offered

Fall, Spring

GENBA 145 - Business and Society**Credits 3**

An overview of the role of business in society. Students will engage in a variety of activities including group discussions, practical learning exercises, and case examples to examine the historical, current, and future role of business in society. Students will explore the role that critical thinking plays in forming business decisions and learn about the impact of differing economic environments on businesses. Students will examine the importance of the entrepreneurial mindset in value creation and how businesses generate value for society.

Repeat for Credit

N

Typically Offered

Fall, Spring

GENBA 189 - Introduction to the University Honors Program**Credits 1**

Overview of the University Honors Program including directions, goals, and student requirements for completion of the program.

Repeat for Credit

N

Typically Offered

Fall, Spring

GENBA 195 - CAT Community Connections**Credits 1-3**

Interdisciplinary course that explores the connections among two different fields, courses, or disciplines. Topics and corequisites vary by section and semester.

Repeat for Credit

N

Typically Offered

Fall, Spring

GENBA 205 - Career Accelerator**Credits 0-1**

Essential course on career preparation for all business students with topics focused on career exploration, personal brand, networking, resumes, interview skills, and workplace expectations. Students completing this course will be well-equipped to engage with employers while leveraging extensive campus and College of Business resources to enhance internship and future employment opportunities.

Repeat for Credit

N

Requisites

Prerequisite: College of Business students only and Sophomore Standing.

Typically Offered

Fall, Spring, Summer

GENBA 299 - Honors Colloquium in Business**Credits 1**

Discussions and lectures on topics of interest to business students.

Note

Open to freshmen and sophomores in the honors program for the College of Business Administration.

Repeat for Credit

N

Typically Offered

Fall, Spring

GENBA 375 - International Business Experience

Credits 0

An international business experience that requires travel to a foreign country. The length of the tour varies from one week to 16 weeks. This course enables students to complete an international experience that would include study, research, or work in a foreign country. The course provides enriched experience in the financial and business practices in a foreign country and enhances students' global and cultural awareness.

Repeat for Credit

N

Typically Offered

Fall, Spring

GENBA 391 - Administrative Communications

Credits 3

Preparation of business communications, reports, and correspondence, and analysis of communication systems within an enterprise structure.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 120 and COMM 106.

Typically Offered

Fall, Spring, Summer

GENBA 399 - Honors Seminar

Credits 1

The Honors Seminar is designed as a follow-up course to

the Honors colloquium and it prepares students for the honors capstone project that culminates into the honors project. It also provides a forum for all honors students who are working on their capstone honors project to share and discuss their project ideas.

Note

Although students are encouraged to focus on a business-related topic, the choice of topic is open to all disciplines. The selection of an area of study is subject to the approval of the Honor Director (or Honors Committee).

Repeat for Credit

N

Requisites

Prerequisite: GENBA 299.

Typically Offered

Spring

GENBA 498 - Problems in Business Administration

Credits 1-18

In-depth analysis of special problems in general business including study of current literature.

Note

Consent of instructor and the department head.

Repeat for Credit

Y

Requisites

Prerequisite: Senior standing

Typically Offered

On sufficient demand

GENBA 499 - Business Honors Project

Credits 3

A business honors project is an independent study in an intellectual endeavor (research or creative activity) under the supervision of a faculty member. The project must be approved by the College of Business Honors Director in consultation with the faculty supervisor and the University Honors Program Director. Deliverables of an Honors project may include a paper presented at a student or professional conference, a paper presented at a

faculty/student seminar, a paper appearing in a poster presentation or a paper submitted for a national competition.

Note

Open to juniors and seniors in the honors program for the College of Business Administration.

Repeat for Credit

N

Requisites

Prerequisite: GENBA 399.

Typically Offered

Fall, Spring

GENBA 675 - International Business Experience

Credits 0

An international business experience that requires travel to a foreign country. The length of the tour varies from one week to 16 weeks. This course enables students to complete an international experience that would include study, research or work in a foreign country. The course provides enriched experience in the financial and business practices in a foreign country and enhances students' global and cultural awareness.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

GENBA 800 - MBA Professional Development

Credits 1-3

This course will require the student to work with the director of the MBA program to outline a professional development program of 45 hours per hour of credit to enhance their MBA studies and to enhance their professional career.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the MBA program.

Typically Offered

Fall, Spring, Summer

GENBA 861 - International Field Study

Credits 1-3

Graduate level course designed to provide students with an opportunity to observe international business by participating in a field trip outside the United States. This experiential course may involve a combination of business visits, interactions with business executives, cultural experiences, internship activities, or other learning activities while abroad.

Note

Instructor approval.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing

Typically Offered

Fall, Spring, Summer

GENBA 875 - MBA International Business Experience

Credits 1-3

This course will consist of a faculty-led international experience designed to expose students to international business practices and culture.

Repeat for Credit

Y

Requisites

Prerequisite: Admission to the MBA program.

Typically Offered

Fall, Spring, Summer

GENBA 890 - Business Capstone

Credits 3

The analysis of business problems, using knowledge and tools from previous courses. Students, under the supervision of a team of faculty, will analyze actual business case problems.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 860, FINAN 715, GENBA 880 and MKTG 705.

Typically Offered

Spring

GENBA 894 - Data Analytics Capstone**Credits 3**

This course is a hands-on, project based course completed in cross-disciplinary groups. The capstone course will require students to work together on projects that will demonstrate their ability to collaboratively analyze large datasets, provide insight for practical problems and effectively communicate the resulting insights.

Note

Students are expected to take this capstone course at the end of the program.

Repeat for Credit

N

Requisites

Prerequisite: Student admitted in the Graduate Certificate in Data Analytics.

Typically Offered

Summer

GENBA 898 - Topics in Business**Credits 1-3**

Discussion and analysis of current issues in business such as accounting, management, finance, marketing, etc.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 100 - World Geography & Globalization**Credits 3**

Introduction to geography structured on a framework of major world regions and countries. Within the regional approach is an explicit discussion of the essential concepts rooted in historical, cultural, social, political, economic, religious, gender, urban geography, and globalization.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

GEOG 121 - Introductory Physical Geography: Earth Systems Science**Credits 3**

A systemic introduction to the processes and spatial patterns of the atmosphere, biosphere, geosphere, and hydrosphere and their interactions at the Earth's surface. Prepares science and engineering majors for more advanced coursework and promotes improved environmental literacy of non-science majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOG 122 - Introduction to Physical Geography: Earth Systems Science Laboratory**Credits 1**

Laboratory investigation of the processes and spatial patterns of the atmosphere, biosphere, geosphere, and hydrosphere and their interactions at the Earth's surface.

Repeat for Credit

N

Requisites

Corequisite: GEOG 121

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

GEOG 200 - Human Geography

Credits 3

A geographical assessment of the way human activities shape landscapes throughout the world. The course is especially appropriate for students interested in the social and behavioral sciences.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

GEOG 201 - Human Geography (Honors)

Credits 3

Spatial aspects of human organization and behavior are examined through selected concepts in modern geography. The course is especially appropriate for students interested in the social and behavioral sciences.

Repeat for Credit

N

Requisites

Prerequisite: Membership in arts and sciences honors program.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

GEOG 235 - Atmospheric Science

Credits 4

A comprehensive scientific study of the physics, chemistry, and dynamics of the earth's atmosphere, from the earth's surface to several hundred kilometers. Fundamental topics covered include atmospheric composition and variability, subdivisions of the atmosphere, energy and mass transfers within the Earth-atmosphere system, atmospheric circulation, and accurate prediction of atmospheric phenomena.

Repeat for Credit

N

Requisites

Recommended Foundation Course: MATH 100

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOG 300 - Geography of Tourism

Credits 3

The geography of tourism is concerned with the structure, form, use, and conservation of the landscape as well as with such spatial conditions as the location of tourist areas and the movements of people from place to place. This course addresses such concepts as the economic, environmental, social, and cultural impacts of tourism as well as examining the tourist geography of each of the world's regions, focusing on the major tourist areas.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

GEOG 302 - Cartography and Thematic Mapping

Credits 3

Introduction to cartographic history, theory and principles, thematic map design, symbolization, map perception, color theory, typography, and digital cartographic research. Laboratory work will familiarize students with the latest cartographic software that will be used to produce a series of thematic maps.

Note

The course will consist of two hours of lecture and two hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 or equivalent.

Typically Offered

Fall

GEOG 310 - Geography of Kansas

Credits 3

A regional and historical analysis of Kansas including discussion of the physical environment, historical development, and current geographic patterns.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

GEOG 331 - Introduction to Japan

Credits 3

Geographical survey of Japan from prehistoric times to the present day, which may include material on society, politics, and culture.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

HIST 331

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

GEOG 332 - Introduction to China

Credits 3

Survey of the geography, history, politics, and culture of China from prehistoric times to the present day.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

HIST 332

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

GEOG 335 - European Landscapes

Credits 3

Explores how humans have interacted with their environment and modified the natural and cultural landscape within Europe.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Historical Perspectives

GEOG 340 - Natural Resources

Credits 3

The significance, environmental consequences, and locational characteristics of natural resources and resource-based economic activities, including agriculture, fishing, forestry, and mining. Sustainability and conservation considerations related to natural resource extraction, management, and use.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

GEOG 350 - Earth System Geography

Credits 4

A basic physical geography course emphasizing the geosphere, hydrosphere, atmosphere and biosphere, including the processes, patterns, and physical science background required to understand related issues such as natural hazards and human modification of earth systems.

Note

Offered in an on-line format during summer semesters only through the Division of Continuing Education.

Repeat for Credit

N

Typically Offered

Summer

GEOG 360 - Sustainability Concepts & Issues

Credits 3

Exploration of sustainability concepts, approaches, and decision-making. Relation of sustainability to environmental, economic, and social considerations at global, regional, and local scales.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

GEOG 370 - Environmental Justice

Credits 3

Introduction to the history of the environmental justice movement with a focus on resource exploitation, degradation of natural resources, (in)justice, race, class, and governance.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

GEOG 380 - World Population Issues

Credits 3

Discussion of world population distribution, composition, growth, and migration patterns and processes. Emphasis is on recent demographic changes at global, regional and local scales and their socioeconomic and environmental implications.

Repeat for Credit

N

Typically Offered

Fall or Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Empirical and Quantitative Reasoning

GEOG 399 - Honors Seminar in Geography

Credits 2-3

Selected topics.

Note

Open to non-majors in the honors program.

Repeat for Credit

N

Typically Offered

Fall

GEOG 440 - Spatial Analysis of Surface Water Hydrology**Credits 3**

Introduces components and measurement techniques of surface water hydrology including precipitation, evapotranspiration, overland flow, and stream flow, as well as their spatial distribution on the Earth's surface and relationships between changes in surface water and the environment.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 121 or instructor permission.

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Empirical and Quantitative Reasoning

GEOG 445 - Biogeography**Credits 3**

Covers: 1) the spatial and temporal patterns of the distribution of living organisms on Earth (including plants, animals, and microbes), and 2) the biological and physical processes responsible for these patterns. Biogeography has crucial insights to offer regarding conservation of rare species, global changes such as climate change, and human domination of the Earth surface.

Repeat for Credit

N

Requisites

Prerequisite: One course in geography, life science, or physical science.

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

GEOG 450 - Geography of Economic Behavior**Credits 3**

The location of manufacturing industries and patterns of commercial activity. Case studies and simulations are used with emphasis on modern concepts of site selection and community development.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

GEOG 460 - Human Dimensions of Global Change**Credits 3**

An examination of the complexity of forces driving global change, with an emphasis on change related to population growth, technological development, and sociocultural and socioeconomic institutions.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 121 and either GEOG 100 or GEOG 200.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

GEOG 490 - Problems in Geography

Credits 1-18

Problems in Geography

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 495 - Capstone Seminar in Geography

Credits 2

An integrative capstone seminar requiring geography majors to synthesize knowledge and skills acquired in prior geography courses. Students pursue independent projects in consultation with a faculty member and present their findings in written and oral reports. The course exposes students to and helps prepare them for a variety of professional and scholarly opportunities available after graduation.

Note

Meets for two hours once a week. Required of and restricted to geography undergraduate majors. Junior standing recommended.

Repeat for Credit

Y

Requisites

Prerequisite: Junior geography majors.

Typically Offered

Spring

K-State 8

Social Sciences

GEOG 497 - Undergraduate Research in Geography

Credits 1-3

Independent research project conducted with the guidance of a faculty mentor.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 498 - Honors Tutorial in Geography

Credits 1-3

Individual directed research and study of a topic in geography, normally as a preliminary to writing a senior honors thesis.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing, membership in the honors Program of the College of Arts and Sciences, and permission of the instructor.

Typically Offered

Fall, Spring

GEOG 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

GEOG 500 - Geography of the United States

Credits 3

A regional analysis of the United States with special attention to the historical, political, economic, and social factors which contribute to areal differentiation within the

area.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

GEOG 505 - South Asian Civilizations

Credits 3

Interdisciplinary survey on the development of civilization in India, Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, and Afghanistan, including geography, philosophy, social, economic, political institutions, and historical movements.

Repeat for Credit

N

Requisites

Prerequisite: Three hours of social science or junior standing.

Typically Offered

Fall-Even Years

Crosslisted

ECON 505, HIST 505, POLSC 505, SOCIO 505, ANTH 505

GEOG 506 - Geography of South Asia

Credits 3

This course will provide a survey of the physical and human geography of South Asia. More specifically, it will cover the major environmental, economic, demographic, and cultural geography patterns, processes, and issues of the region. Problems related to religious, ethnic, and linguistic diversity, along with environmental problems associated with global climate change and others will be examined in the context of modernization and economic development.

Note

This will be a lecture type course and each relevant topic will be covered in some detail.

Repeat for Credit

N

Requisites

Prerequisite: Three hours of Social Science or junior standing.

Typically Offered

Fall

GEOG 508 - Geographic Information Systems I

Credits 4

Examination of the major theories, concepts, and operations in geographic information systems (GIS). Topics include: the structure of geographic data models, geographic data acquisition, spatial database management, data processing methods. Vector and raster GIS operations, and general approaches to GIS-based spatial modeling.

Note

The course will consist of two hours of lecture and two hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 302.

Typically Offered

Spring

GEOG 510 - Geography of the American West

Credits 3

A broad survey of the geography of the American West with a focus on the distinctive human and environmental characteristics of the region. Historical, cultural, ethnic, resource, land use, and physical landscape patterns are examined through lectures, readings, videos, and discussions.

Repeat for Credit

N

Requisites

Prerequisite: A previous course in geography and sophomore standing.

Typically Offered

Spring-Even Years

GEOG 535 - Global Climatology and Climate Change

Credits 4

An examination of the physical processes that control the dynamics and spatial distribution of climates at the global scale, and how these processes can result in variation and change in the climate system. Topics include radiation and energy balance, global circulation, and the hydrologic cycle as well as the biosphere and humans as climate regulators and causes of change.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GEOG 121.

Typically Offered

Spring

GEOG 550 - Political Geography and Geopolitics

Credits 3

Critically analyzes relations between space and power in historical and contemporary geopolitical contexts, including topics such as sovereignty, border making, territorial disputes, and the formation (and dissolution) of nation-states.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GEOG 100 or GEOG 200

Typically Offered

Fall

Crosslisted

POLSC 550: Political Geography and Geopolitics

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

GEOG 600 - Mountain Geography

Credits 3

A broad survey of the human and physical geography of mountains. The course utilizes lectures, discussion, videos, and photographs to examine the human-environment interactions, cultural symbolism and sacredness, recreation and tourism, and sustainable development of mountain landscapes. The regional focus is primarily on the American West, but other mountains throughout the world will also be studied.

Repeat for Credit

N

Requisites

Prerequisite: A previous course in geography and junior standing.

Typically Offered

Fall-Even Years

GEOG 602 - Computer Mapping and Geographic Visualization

Credits 3

Basic cartographic principles, advanced methods for representing spatial data, approaches for exploratory spatial data analysis, and practical applications of thematic maps, animated and Internet-based maps, and geographic visualization techniques. Students will prepare a series of maps and visualization products using modern geographic information system and illustration software.

Note

The course will consist of two hours of lecture and two hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 508.

Typically Offered

Spring

GEOG 605 - Remote Sensing of the Environment

Credits 3

Remote sensing and its application to earth study,

especially environmental problems and land use. Course employs both readings and the use of imagery.

Note

Two hours lecture, two hours lab.

Repeat for Credit

N

Requisites

Prerequisite: One course in physical science and one in biological science.

Typically Offered

Fall, Spring

Crosslisted

AGRON 706

GEOG 608 - Geographic Information Systems II

Credits 3

Advanced principles of and applications for geographic information systems (GIS). Examines the nature and accuracy of geo-referenced data and methods of data capture, storage, retrieval, modeling, and digital map display. Students will use modern GIS software packages and digital geographical data from physical and/or cultural sources to explore software procedures and techniques of spatial analysis, decision support, and geographic visualization.

Note

The course will consist of two hours of lecture and two hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 302 and GEOG 508 (or consent of instructor).

Typically Offered

Fall

GEOG 610 - Geography Internship

Credits 1-6

Faculty-supervised field experience, emphasizing the

application of geographical topics and/or techniques. Student projects must be approved by both the on-site director and the faculty supervisor, and a report must be submitted at the end of the semester.

Repeat for Credit

N

Requisites

Prerequisite: Permission of the instructor and junior standing in geography is required.

Typically Offered

Fall, Spring, Summer

GEOG 620 - Mexico, Central America, and Caribbean

Credits 3

A broad survey of the physical and human geographic patterns of Middle America (Mexico, Central America, and the Caribbean), past and present, with emphasis on the changing landscape features in the successive patterns of human occupancy and globalization.

Repeat for Credit

N

Typically Offered

Spring-Even Years

GEOG 622 - Geography of South America

Credits 3

A survey of the physical and human patterns of South America, past and present, with emphasis on the changing landscape features in the successive patterns of human occupancy and globalization.

Repeat for Credit

N

Typically Offered

Other

GEOG 660 - Geography of East Asia/China

Credits 3

An introduction to the human and physical geography of East Asia, with emphasis on China. Examines this region's

physical, cultural, and socioeconomic patterns and changes, as well as interactions with other parts of the world.

Repeat for Credit
N

Typically Offered
Fall-Even Years

GEOG 680 - Geography of Landscape and Place

Credits 1-3

This seminar explores cultural landscapes (built environments) and the character of place from a geographic perspective, offering junior, senior, and graduate students insights into geographical patterns and opportunities to develop research interests. Grounded in human and cultural geography, the course fosters interdisciplinary discussions, benefiting students from diverse backgrounds who are encouraged to contribute to the topics presented.

Repeat for Credit
Y

Requisites
Recommended Foundation Course: Junior status or consent of instructor.

Typically Offered
Fall

GEOG 690 - Historical Geography of the United States

Credits 3

Interpretation and analysis of the American landscape and its regions from c. 1500 to c. 1950, with particular emphasis on landscape as both place and history. Also introduces and examines such current research topics as identity, contested places, landscape-as-text, and cultural politics.

Repeat for Credit
N

Requisites
Prerequisite: GEOG 100 and one course in American history.

Typically Offered
Summer

GEOG 700 - Quantitative Analysis in Geography

Credits 3

Quantitative methods employed in modern geographical research. Applications of both statistical and mathematical approaches will be treated. Emphasis will be placed on interpretation and evaluation of techniques employed in spatial analysis.

Repeat for Credit
N

Requisites
Prerequisite: One course in statistics.

Typically Offered
Spring

GEOG 705 - Thematic Remote Sensing.

Credits 3

Introduction to digital image analysis in remote sensing, with an emphasis on extraction of thematic information from imagery. Emphasizes mastery of both practical classification techniques and the theory behind those techniques. Topics covered include preparing imagery for classification; per-pixel and object-based classification techniques; use of parametric, nonparametric, and machine learning\AI-based decision rules; and techniques for validating classification accuracy. Classification techniques for hyperspectral imagery will also be covered.

Repeat for Credit
N

Requisites
Prerequisite: GEOG 605 or equivalent.

Typically Offered
Fall, Spring

GEOG 706 - Biophysical Remote Sensing

Credits 3

An advanced seminar covering methods and models for retrieving quantitative information about the Earth's surface

from remotely sensed data. Topics covered will include inversion techniques for determining surface radiance and reflectance, correction of atmospheric effects, theory of vegetation indices and their use in empirical determination of canopy properties, canopy models and their inversion, and the use of hyperspectral data for retrieval of surface biophysical information.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 605.

Co-requisite: A course in a physical or biological science, MATH 210 or MATH 220, or equivalent.

Typically Offered

Fall, Spring

GEOG 707 - Remote Sensing of Water

Credits 3

Reviews and expands the fundamentals of remote sensing theory, basic surface hydrology and hydraulics, remote sensing methods and instruments, measurements of various hydrologic parameters, and integrated approaches in water resource studies

Repeat for Credit

N

Requisites

Prerequisite: GEOG 508 and GEOG 605 or instructor permission.

Typically Offered

Fall

GEOG 709 - Geography Field Research Techniques

Credits 2-3

Explores methods and techniques employed in modern field research. Stresses research design, field data acquisition techniques, and data analysis.

Repeat for Credit

N

Requisites

Prerequisite: junior standing and at least 6 hours in

geography.

Typically Offered

Summer

GEOG 711 - Topics in Remote Sensing

Credits 3

Examination of a selected remote sensing topic in an area of faculty specialization.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 605.

Typically Offered

Spring

GEOG 712 - Internet GIS and Distributed Geographic Information Services

Credits 3

Introduces the development and deployment of Internet maps and GIS-related web services. Students will use virtual globes and Internet map servers to learn the techniques of Internet mapping and development/delivery of geodata and geoprocessing services via the Web. Studio-style classes will focus on building the necessary skills for creating, as well as the practical applications of, customized GIS map applications and "mashups", web-based GIS services, and mobile GIS applications.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 608.

Typically Offered

Spring

GEOG 715 - World Population Patterns

Credits 3

Geographical processes that govern population distributions, growth rates, and migrations. Emphasis on international comparisons and implications for world society of continued differential growth rates

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Fall-Even Years

GEOG 718 - Geography of Public Lands**Credits 3**

Overview of public lands systems, including distribution and uses of public lands, with an emphasis on US federal lands. Historic and recent controversies regarding the public lands will be addressed. Seminar course with discussion and independent research components.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Spring

GEOG 720 - Geography of Land Use**Credits 3**

Critical factors affecting land use, scarcity, and management examined in a regional, national, and global context; land use classification system and variation of land use patterns.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Fall-Odd Years

GEOG 722 - Geographies of International Conservation**Credits 3**

Examines geographic perspectives of global biodiversity

loss and conservation landscapes with an emphasis on the political, economic, and cultural dimensions of conservation around the world.

Repeat for Credit

N

Requisites

Prerequisite: 6 hours of social sciences.

Typically Offered

Fall

GEOG 725 - Geography of Water Resources**Credits 3**

Interpretation and analysis of the physical geography of water and water as a resource. Evaluation of water, emphasizing quality, hazards, institutions, and selected domestic and global issues.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Spring-Even Years

GEOG 728 - Programming for Geographic Analysis**Credits 3**

Introduces programming languages, scripting methods, and/or free and open-source software (FOSS) and their use with geospatial technologies and spatial data. Explanations of programming concepts, demonstrations of techniques, and practical exercises that will enable students to develop their own programs and workflows for geoprocessing, spatial analysis, and map production.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: GEOG 608

Typically Offered

Fall, Spring

GEOG 735 - Topics in Climatology

Credits 3

Introduces geology and geochemistry of fossil fuels. Provides basic background information on carbon chemistry and its relationship to fossil fuels such as oil, natural gas and coal, as well as geochemical and petrologic (microscopic) characteristics of sedimentary organic matter and the distribution of fossil fuels through geologic time. Case studies of particular fossil fuel reserves are included.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 535.

Typically Offered

Fall

GEOG 740 - Fluvial Geomorphology

Credits 3

Exploration of the forms and processes of streams and rivers with a focus on fluid flow mechanics, sediment transport in moving water, and predicting how rivers can change through time. Utilizes a combination of lectures, data analysis, and field work.

Note

The course meets for three hours of lecture per week with one required weekend field trip.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 440 (or equivalent hydrology course) or graduate standing or instructor permission

Typically Offered

Fall

GEOG 742 - Digital Geomorphology

Credits 3

An exploration of geomorphic concepts and 'laws' describing how landscapes and rivers can be used to understand historic and contemporary issues through raster-GIS and the ArcGIS toolbox.

Note

Prerequisite: Instructor permission. Introductory-level knowledge of Geomorphology, GIS and/or statistics is recommended.

Repeat for Credit

N

Typically Offered

Spring

GEOG 745 - Topics in Biogeography

Credits 3

Examination of selected biogeography topics.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 445 or instructor permission.

Typically Offered

Fall

GEOG 747 - Soil Mapping

Credits 3

Presents various approaches to soil mapping including the traditional soil-landscape paradigm, digital soil mapping, and a novel computer modeling. Local field sites will serve to reinforce techniques discussed.

Repeat for Credit

N

Requisites

Prerequisite: GEOG 121.

Typically Offered

Fall

GEOG 750 - Urban Geography

Credits 3

A study of geographic principles relating to the distribution, function, and structure of cities: a geographic analysis and classification of urban settlements.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science or planning.

Typically Offered

Fall

GEOG 761 - Human Impact on the Environment**Credits 3**

Assessment of human impacts on the natural environment. Surveys changing human impacts on and attitudes towards the environment, and details alteration of water systems, the atmosphere, landforms, plants, and animals.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Spring

GEOG 765 - Geography of Natural Hazards**Credits 3**

Examines important emergency management issues related to hazard mitigation, preparedness, disaster response, and recovery, including sociocultural and physical components of disaster process. Assesses human vulnerability and risk to environmental calamities, such as droughts, floods, tornadoes, hurricanes, and earthquakes.

Repeat for Credit

N

Requisites

Prerequisite: Nine hours of social science.

Typically Offered

On sufficient demand

GEOG 770 - Perception of the Environment**Credits 3**

An examination of the way people perceive their

geographic environment and the role of perception in spatial behavior. Perceptions of neighborhoods, cities, states, nations, frontier regions, and environmental processes are explored.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science with one course above the introductory level, and 6 hours of natural science with one course above the introductory level.

Typically Offered

Spring-Odd Years

GEOG 780 - Cultural Geography**Credits 3**

A study of the forms of human occupancy of landscapes, with consideration of innovations in the use of landscape, the origins and the dispersals of these innovations, and human attitudes toward the natural environment.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Spring-Even Years

GEOG 790 - Seminar in Geography**Credits 1-3**

Seminar in Geography

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Other

GEOG 795 - Topics in Geographic Information Science

Credits 1-3

Selected geographic information science topic in science topic in an area of faculty specialization.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 302 or consent of instructor.

Typically Offered

Fall, Spring

GEOG 800 - Graduate Seminar in Geography**Credits 0**

Attendance of presentations and discussion of research procedures, results and philosophies.

Note

Required of all geography graduate students in resident.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring

GEOG 801 - Seminar in Qualitative and Mixed Methods Research**Credits 3**

Qualitative research techniques and integration of qualitative with basic statistical research techniques (mixed methods). Consideration of ethics, data collection, and data analysis.

Repeat for Credit

N

Typically Offered

Spring

GEOG 808 - Geocomputation**Credits 3**

Explores the application of computationally-intensive approaches to the study of complex spatio-temporal problems. Students will learn to simulate, model, analyze, and visualize geographic phenomena that do not lend themselves to other mathematical and statistical methods.

Note

Enrolling students are strongly encouraged to have a strong background in GIS (e.g. GEOG 508 and GEOG 708) and familiarity with traditional statistical methods.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Spring

GEOG 815 - Rural Population Geography**Credits 3**

An examination of the population dynamics responsible for regional change in rural areas of the United States. Emphasis is placed on migration systems and changing population composition in Appalachia, Great Plains, rural South, and the Midwest.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 702 or GEOG 700 or equivalent, and GEOG 715 or SOCIO 830.

Typically Offered

Fall-Even Years

GEOG 820 - Geographic Thought**Credits 3**

History of geographic thought from ancient to modern times, emphasizing major themes and significant individual contributions.

Note

Required for all Master's students in geography.

Repeat for Credit

Y

Typically Offered
Fall

GEOG 821 - Research and Professional Development in Geography

Credits 3

Geographic research approaches, design, implementation and reporting, with applications to research proposals and thesis conceptualization and structuring. Programmatic expectations of graduate students and professional development.

Note
Required for all Master's students in geography.

Repeat for Credit
N

Typically Offered
Fall

GEOG 822 - Advanced Geographies of International Conservation

Credits 3

Examines geographic perspectives of global biodiversity loss and conservation landscapes with an emphasis on the political, economic, and cultural dimensions of conservation around the world.

Repeat for Credit
N

Requisites
Prerequisite: 6 hours of social science.

Typically Offered
Fall

GEOG 830 - Seminar in Rural Geography

Credits 3

Exploration of rural geography concepts and research. Examines social, economic, cultural and environmental issues for rural areas and small towns, including natural resources and stresses and concerns related to sustainability of rural livelihoods and communities.

Repeat for Credit
Y

Typically Offered
Other

GEOG 833 - Seminar in Sustainability Science, Thought, and Approaches

Credits 3

Exploration of scientific, social, and philosophical aspects of sustainability, including concepts, approaches, and decision-making. Environmental, economic, and social considerations will be included.

Repeat for Credit
N

Typically Offered
Fall

GEOG 835 - Rural Economic Development

Credits 3

Applications of regional and community development models in rural areas of North America. Emphasis is placed on case studies of locational relationships between regional economic profiles, including changes in structure, and indices of betterment.

Repeat for Credit
Y

Requisites
Prerequisite: GEOG 700 or 700-level statistics course.

Typically Offered
Fall

GEOG 837 - Political Ecology of Land Cover Change

Credits 3

An introduction to political ecology, concentrating on land use and land cover change.

Repeat for Credit
N

Requisites

Prerequisite: at least 6 hours in social science.

Typically Offered

Spring

GEOG 840 - Advanced Environmental Geography**Credits 3**

An examination of post-European settlement land use and climate changes and their impact on rural landform stability. Emphasis is on the response of uplands and river systems to land use and climate change and the techniques for documenting historical landform change.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 221; GEOL 520.

Typically Offered

Fall-Odd Years

GEOG 841 - Advanced Fluvial Geomorphology**Credits 3**

Studies the forms and processes in streams and rivers. Topics include mechanics of open channel flow, sediment entrainment and transport, river form in determining bank material, and sediment supply.

Repeat for Credit

N

Typically Offered

Spring

GEOG 842 - Advanced Digital Geomorphology**Credits 3**

A thorough exploration of geomorphic concepts and 'laws', by leveraging the power of raster-GIS and ArcGIS models in combination with modern digital elevation datasets.

Note

Instructor permission. Introductory-level knowledge of Geomorphology, GIS and/or statistics is recommended.

Repeat for Credit

N

Typically Offered

Spring

GEOG 850 - Topics in Environmental Geography**Credits 1-3**

Topics in Environmental Geography

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 855 - Seminar in Cultural Geography**Credits 3**

An examination of the development and distribution of the rural cultural landscapes, focusing particularly on elements of the material landscape. Emphasis placed upon research conducted in the Great Plains.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 500.

Typically Offered

Spring-Even Years

GEOG 860 - Topics in Economic Geography**Credits 1-3**

Topics in Economic Geography

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 861 - Human Impact on the Environment**Credits 3**

Assessment of human impacts on and attitudes towards the environment, and details alteration of water systems, the atmosphere, landforms, plants, and animals.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of social science.

Typically Offered

Spring

GEOG 865 - Seminar in Medical Geography**Credits 3**

Emphasizing the pattern of social and environmental conditions on health and disease, this course examines medical care systems and health issues in rural areas of both developed and developing countries.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 702 or GEOG 700.

Typically Offered

Spring-Odd Years

GEOG 870 - Topics in Human Geography**Credits 1-3**

Topics in Human Geography

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 880 - Spatial Data Analysis and Modeling**Credits 3**

An examination of statistical techniques and models for analyzing spatial data, including global and local measures of spatial association, spatial cluster analysis, spatial autoregressive and geostatistical models, and geographically weighted regression (GWR).

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 508 and GEOG 700 or equivalents.

Typically Offered

Spring

GEOG 890 - Advanced Spatial Analysis Techniques**Credits 3**

Integration of spatial analysis techniques and models with tools such as Geographical Information Systems and Remote Sensing as applied to rural resource systems. Explores strategies for adaptation of various types of spatial models into the GIS framework. Sources of data for analysis will be considered with special emphasis placed on use of remotely sensed data.

Repeat for Credit

Y

Requisites

Prerequisite: GEOG 705 and GEOG 708; GEOG 700 or STAT 702.

Typically Offered

Spring

GEOG 895 - Topics in Spatial Analysis**Credits 1-3**

Independent advanced study of a selected topic. An

example is the use of remote sensing and GIS in environmental modeling.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GEOG 898 - Master's Report

Credits 2

For students enrolled in geography option B.

Repeat for Credit

Y

Requisites

Prerequisite: Registration in Graduate School, with sufficient training to carry on the line of research undertaken. Consent of instructor.

Typically Offered

Fall, Spring, Summer

GEOG 899 - Master's Thesis

Credits 6

For student enrolled in geography option A.

Repeat for Credit

Y

Requisites

Prerequisite: Registration in the Graduate School, with sufficient training to carry on the line of research undertaken. Consent of instructor.

Typically Offered

Fall, Spring, Summer

GEOG 900 - Methods, Theory, and Models in Geography

Credits 3

Comparative analysis of contemporary methodology of geographic explanation showing their development, current

status and future trends. Examination of problems and techniques of design, data collection, analysis, and interpretation which accompany particular research themes.

Repeat for Credit

Y

Requisites

Prerequisite: M.A. and consent of instructor.

Typically Offered

Fall

GEOG 990 - Research Problems in Rural Geography

Credits 1-18

Individual study and research for students admitted to doctoral standing in the graduate school.

Repeat for Credit

Y

Requisites

Prerequisite: M.A. and consent of instructor.

Typically Offered

Fall, Spring

GEOG 999 - PhD Dissertation Research

Credits 1-18

PhD Dissertation Research

Repeat for Credit

Y

Typically Offered

Other

GEOL 100 - Earth in Action

Credits 3

The earth's physical, structural, and dynamic features; the most common minerals and rocks; processes affecting the earth.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 101 - Geology Colloquium**Credits 1-3**

Topics in earth science chosen to illustrate current research of scientists and methods chosen to study the physical universe. At each offering of this course a syllabus will be available giving the topics to be studied and the details of administration of the course.

Repeat for Credit

Y

Typically Offered

Fall, Spring

GEOL 103 - Geology Laboratory**Credits 1**

Laboratory investigation of rocks and minerals; use of geologic and topographic maps; understanding of stream and groundwater processes and landforms.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or co-requisite: GEOL 100, GEOL 200, GEOL 115 or GEOL 125.

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

GEOL 104 - Dynamic Earth Laboratory**Credits 1**

Covers basic principles and tools of the geosciences and their applications.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

GEOL 105 - Oceanography**Credits 3**

The oceans: their boundaries, contents, and processes.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

GEOL 110 - Introductory Geology Honors**Credits 3**

Survey of earth materials, features, and processes. Higher level of sophistication and challenge than GEOL 100.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

GEOL 115 - Environmental Geology**Credits 3**

Discussion of Earth system materials including minerals,

soil, sediment, rocks, water, and atmospheric gases and how they are impacted by human-environmental interactions, including contamination of surface water and groundwater; energy resources and the green energy agenda; plate tectonics, volcanism and accumulation of greenhouse gases as a driver of climate change.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 120 - Age of Dinosaurs

Credits 3

Reconstructs the world of the dinosaurs, and places it in the context of Earth's dynamic physical and biological history. The inferred biology and ecology of dinosaur species will be discussed, and the theories concerning their origin, evolution, and extinction will be presented.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

On sufficient demand

GEOL 125 - Natural Disasters

Credits 3

Discussion of geological phenomena such as earthquakes, volcanic eruptions, landslides, and floods, with particular emphasis on their causes, effects, and significance as hazards.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

GEOL 200 - Earth Through Time

Credits 3

Earth Through Time provides a comprehensive survey of Earth's 4.5 billion year history. It explores the major events that have shaped the physical and biological development of Earth and how processes like plate tectonics and climate change interact with life, forming an integrated system.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Pre-requisite: GEOL 100

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 305 - Sustainable Earth Resources

Credits 3

Formation and development of Earth's energy, mineral (metallic and non-metallic), and water resources. Additional emphasis will be placed on public and environmental impacts (e.g., climate change, water quality, food resources, etc.) of responsible resource exploitation and whether resource extraction can truly be sustainable.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100 or GEOG 121.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 310 - Topics in Geology**Credits 1-3**

Seminar discussion of subjects of current interest in geology.

Repeat for Credit

N

Requisites

Prerequisite: A course in natural science at the 100 level or higher.

Typically Offered

Fall, Spring

GEOL 315 - Geology of the National Parks**Credits 3**

Geological survey of the land forms, structure, rocks and hazards of America's National Parks. Each park's geological development through time is explained with special attention placed on how the geologic processes (igneous activity, mountain building and uplift, glaciation, weathering and erosion, wave action, and groundwater) shaped and created the exceptional landscapes in our national parks and the impact of human activities on these unique places that we as a nation have chosen to preserve.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100 or GEOL 105 or GEOG 121

Typically Offered

On sufficient demand

K-State 8

Natural and Physical Sciences

GEOL 360 - Quantitative Methods in Geoscience**Credits 3**

Design geological data sampling, investigate whether or not two geological datasets are significantly different, develop regression-based equations among various quantities, analyze data in Excel and MATLAB, and handle large geological datasets.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220 or STAT 225

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 399 - Honors Seminar in Geology**Credits 1-3**

Selected topics.

Note

Open to non-majors in the honors program.

Repeat for Credit

N

Typically Offered

Fall, Spring

GEOL 499 - Senior Honors Thesis**Credits 1-3**

Directed research and preparation of an honors thesis.

Note

Open only to seniors in the arts and sciences honors program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

GEOL 501 - Independent Study in Geology

Credits 1-3

Independent reading; field or laboratory investigations, or both, of geologic problems.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

GEOL 502 - Mineralogy

Credits 3

Physical and chemical properties of minerals; crystallography; mineral formation; applications to economic geology and petrology; emphasis on mineral identification through laboratory analysis.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100, GEOL 103, and either CHM 110 and CHM 111, or CHM 210 or CHM 250

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 503 - Petrology

Credits 3

Investigation of the physical and chemical processes forming igneous, metamorphic and sedimentary rocks and their links to tectonic processes that form the Earth's crust and mantle. Develop petrogenetic understanding through macroscopic and microscopic examination of rock mineralogy and textures.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 502

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 506 - Environmental Studies

Credits 3

Physical and chemical qualities of natural environments and health from a geologic perspective-detection and prediction of environmental changes, identification of sources of pollutants and their movements in soils, rocks, and waters.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100.

Typically Offered

On sufficient demand

GEOL 510 - Geology of Planets

Credits 3

Explores recent findings concerning the origin and evolution of planetary bodies in our Solar System, and of exoplanets in orbit around stars other than our Sun.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100 or GEOL 125

Typically Offered

Summer

K-State 8

Natural and Physical Sciences

GEOL 512 - Earth Science**Credits 3**

A critical study of the atmosphere, weather, climate, composition, and processes of the earth; also, the interaction of these in producing the pattern of landforms and human activity.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100 or GEOG 121

Typically Offered

On sufficient demand

GEOL 520 - Geomorphology**Credits 3**

Classroom, laboratory, and field studies of landforms and surficial deposits, with an emphasis on earth-surface processes. Classroom lectures and discussions; laboratory exercises; and field investigations.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100 or GEOG 121.

Typically Offered

Fall

GEOL 530 - Structural Geology**Credits 3**

Mechanics of the earth's crust; origin and interrelation of structures of the Earth. Students learn to identify the main structures, to interpret and integrate them in a regional geodynamic context. In addition, students learn to collect field data and to do quantitative analyses using stereographic projection.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 502

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 540 - Geologic Record of Climate Change**Credits 3**

Introduction to the major forcing and feedback mechanisms responsible for climate change, and climate proxies from sedimentological, biological and geochemical archives. Investigation of key events on the Earth's climate history.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 100 or GEOG 121.

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 560 - Field Methods

Credits 3

Introduction to methods used to collect geologic data in the field. Emphasis is placed on map-reading, rock description, use of aerial photographs, and construction of geologic maps and cross sections. Learn how to write a field mapping report and safety protocols for field work.

Note

One hour recitation and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503 and GEOL 530 (or co-enrollment in GEOL 530)

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 581 - Principles of Paleontology**Credits 3**

An overview of paleontological principles relating to the application of the fossil record to questions of evolution, paleoecology, paleoenvironment, depositional dynamics, facies analysis, and stratigraphy. Identification of main fossil groups.

Note

Two 1.5 hour lectures, and one 3-hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 200

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 599 - Senior Thesis**Credits 1-3**

Directed research and preparation of a senior thesis.

Repeat for Credit

Y

Typically Offered

Fall, Spring

GEOL 601 - Economic Geology**Credits 3**

Geology and origin of mineral deposits, with an emphasis on critical minerals, sustainability, economic significance, and resources necessary for society.

Repeat for Credit

N

Requisites

GEOL 503

Typically Offered

Spring

GEOL 602 - Mineral Exploration for a Sustainable Future**Credits 3**

Covers basic mineral exploration techniques required for a sustainable future for society. Students will gain experience in different geological, geophysical (induced polarization, magnetic and radiometry surveys), and geochemical techniques employed by the industry, with specific emphasis on critical materials used for the energy transition. Multidisciplinary approaches used to interpret large datasets to generate exploration targets which can be sustainably obtained are taught as well as guest lectures from industry professionals.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503.

Typically Offered
On sufficient demand

GEOL 605 - Introduction to Aqueous Geochemistry

Credits 3

Application of chemical principles to geological environments. Emphasis is placed on aqueous systems. Topics include acid-base and redox reactions in natural environments, geochemical kinetics, surface water and groundwater sampling, analytical geochemistry, and data analysis.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: CHM 110 and CHM 111 OR CHM 210 and CHM 211 Recommended Foundation Course: GEOL 502

Typically Offered
Spring

GEOL 611 - Hydrogeology

Credits 3

Physical and chemical principles of the water cycle (evaporation, condensation, precipitation, runoff, stream flow, percolation, and groundwater flow), as well as environmentally relevant applications based on case studies. Extensive coverage of groundwater hydrology, surface water hydrology, soil moisture, contemporary global issues related to water resources, including pollution control, and also hydrogeochemistry will be discussed.

Note
Note: Familiarity with web browsers, MS Excel or other spreadsheet software, word processor. Calc I and Calc II and Chm I and Chm II are recommended. Consult the instructor if you have not taken these courses.

Repeat for Credit
N

Requisites
Prerequisite: GEOL 100 or GEOL 115.

Typically Offered
Spring

GEOL 620 - Volcanology

Credits 3

Examines processes associated with active volcanoes as revealed by volcanic deposits. Emphasis on influence of volcanoes on human civilizations including economic deposits, climate change, or volcano monitoring.

Repeat for Credit
N

Requisites
Prerequisite: GEOL 503

Typically Offered
On sufficient demand

GEOL 625 - Introduction to Engineering Geology and Petrophysics

Credits 3

Students learn basic fundamentals to solve real-world problems in the area of geology and petrophysics. A field trip to an onshore oil rig in Kansas helps consolidating course materials with demands.

Repeat for Credit
N

Requisites
Prerequisite: MATH 220

Typically Offered
Spring

Crosslisted
GEOG 825

GEOL 630 - Sedimentology and Stratigraphy

Credits 3

This course introduces the basic principles used in the study of Sedimentology and Stratigraphy. Sedimentology is the study of sediment, particularly focusing on how it is transported, and deposited. Stratigraphy emphasizes the analysis of sedimentary strata that provide many of the

details of the Earth's history: effects of sea level change, global climate, tectonic processes, and geochemical cycles. This course covers basics of fluid flow and sediment transport, sedimentary structures and textures, and interpretation of ancient depositional environments, as well as the techniques used to put strata in context of time and space.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503.

Typically Offered

Spring

GEOL 631 - Petroleum Geology

Credits 3

Summarizes the fundamentals of Geology that need to be understood and integrated to manage petroleum reservoirs as well as other fluid resources. The course focuses on lessons learned from exploration and exploitation of petroleum reservoirs but techniques taught are transferrable to renewable resources.

Repeat for Credit

N

Requisites

Pre-requisites: GEOL 530 and GEOL 630

Typically Offered

Fall

GEOL 640 - Introduction to Geophysics

Credits 3

Introduction to geophysics, its uses in studies of the earth's interior, its utility of illuminating subsurface geological features, and its applications in fields such as groundwater studies and the development of energy resources.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220, PHYS 113, or PHYS 213, or instructor consent.

Typically Offered

Fall

GEOL 642 - Field Geophysics

Credits 3

Acquisition and computer processing of geophysical data such as those from seismic reflection, seismic refraction, gravity, magnetic and electrical methods.

Note

One hour recitation and four hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 640; co-enrollment, or instructor consent

Typically Offered

Spring

GEOL 650 - Geomicrobiology

Credits 3

An introduction to microbiology and biogeochemical cycling and examination of interactions between microbes and geological environments. Topics include biomineralization, microbial weathering of minerals, and microbial impacts to greenhouse gas levels and water quality.

Note

Three hours a week. Lecture and Lab

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 and CHM 111 OR CHM 210 and CHM 211

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GEOL 680 - Field Geology**Credits 3**

Field projects in the Rocky Mountains designed to give students practical experience in apply geologic knowledge and skills.

Note

Three six day weeks in the field.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503, GEOL 530, and GEOL 560.

Typically Offered

Summer

GEOL 701 - Economic Geology**Credits 3**

Geology and origin of mineral deposits, with an emphasis on critical minerals, sustainability, economic significance, and resources necessary for society.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503.

Typically Offered

Spring

GEOL 703 - Economic Geology Laboratory**Credits 1**

Laboratory activities related to metallic and nonmetallic mineral deposits, including detailed studies of selected deposits.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 701 or concurrent enrollment.

Typically Offered

Fall

GEOL 704 - Carbonate Paleoenvironments**Credits 3**

Examination of the biological, physical, and chemical factors in reefs and shallow carbonate platform environments through Earth history, including their modern analogs. Attention will be given to the geometry of carbonate facies, their geographic and temporal distribution, and their sedimentary fabric and porosity.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 581 and GEOL 630.

Typically Offered

On sufficient demand

GEOL 705 - Biomineralization**Credits 3**

Discussion and critique of current and classic research in biomineralization.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 581 and GEOL 605.

Typically Offered

On sufficient demand

GEOL 708 - Sedimentary Geochemistry**Credits 3**

Geochemical principles and processes in deposition and diagenesis of sediments; different chemical pathways in the exogenic cycle.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503 and MATH 220.

Typically Offered

On sufficient demand

GEOL 711 - Water Resources Geochemistry**Credits 3**

Geochemistry of ground and surface waters; emphasis on mineralogical, biochemical, and hydrologic controls on inorganic and organic interactions in natural waters.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 and CHM 111 OR CHM 210 and CHM 211; Recommended Foundation Course: GEOL 605 or AGRON 605

Typically Offered

Fall

GEOL 712 - Advanced Geochemistry**Credits 3**

Application of chemical principles to high temperature conditions relevant to igneous and metamorphic systems; emphasis is on integrating and utilizing a variety of scientific techniques (e.g., microscopy, geochemical analysis, modelling, theory) to solve problems and communicate ideas effectively.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503 and CHM 230 OR CHM 250 (or instructor permission)

Typically Offered

On sufficient demand

GEOL 714 - Rock Microstructures and Geologic Processes**Credits 3**

Examination of mineral shapes, orientations and assemblages (rock fabric) as a record of geologic processes.

Note

Two hours lecture and two hour lab.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 503 and CHM 230.

Typically Offered

On sufficient demand

GEOL 715 - Dating Earth Materials**Credits 3**

Discusses how ages are measured for rocks, minerals, waters, and sediments by analysis of isotopes produced by radioactive decay or cosmic rays.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230, GEOL 503.

Typically Offered

On sufficient demand

GEOL 720 - Quaternary Geology**Credits 3**

Quaternary stratigraphy as the framework for studying the geomorphic, climatic, archaeological, and biological changes of the last two million years, with emphasis on the North American record.

Note

Three hours recitation a week and one field trip a semester.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 630.

Typically Offered

On sufficient demand

GEOL 731 - Petroleum Geology**Credits 3**

Summarizes the fundamentals of Geology that need to be understood and integrated to manage petroleum reservoirs as well as other fluid resources. The course focuses on lessons learned from exploration and exploitation of petroleum reservoirs but techniques taught are transferrable to renewable resources.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 530 and GEOL 630

Typically Offered

Fall

GEOL 735 - Fossil Fuel Sedimentology**Credits 3**

Introduces geology and geochemistry of fossil fuels. Provides basic background information on carbon chemistry and its relationship to fossil fuels such as oil, natural gas and coal, as well as geochemical and petrologic (microscopic) characteristics of sedimentary organic matter and the distribution of fossil fuels through geologic time. Case studies of particular fossil fuel reserves are included.

Repeat for Credit

N

Requisites

Prerequisite: CHM 230

Typically Offered

On sufficient demand

GEOL 738 - Formation Evaluation**Credits 3**

Investigates projects on well log interpretation, petro-physical calculations, log corrections, and post-drilling decision workflows through lectures, discussions, laboratory exercises, or field trips.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 731.

Typically Offered

Fall

GEOL 740 - Regional Geology**Credits 3**

Interpretations of geomorphological, structural, stratigraphic, petrologic (igneous, metamorphic, and sedimentary), and tectonic history of selected geological regions on Earth. Classroom and field investigation.

Repeat for Credit

Y

Requisites

Prerequisite: GEOL 100, GEOL 103, and Instructor consent

Typically Offered

Spring, Summer

GEOL 741 - Seismic Data Processing**Credits 3**

Principles of 3D seismic data processing techniques and the application of industrial software package(s) to process raw field seismic reflection data to render it in a form suitable for the seismic interpretation stage. This form of seismic data is utilized in subsurface reservoir characterization.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 640, co-enrollment or instructor consent

Typically Offered
On sufficient demand

GEOL 742 - Seismic Data Interpretation

Credits 3

Fundamental interpretation of 3D seismic reflection data as applied to hydrocarbon exploration and development problems. Students will conduct a project interpreting surface 3D seismic reflection data using industrial software package(s) for subsurface reservoir characterization.

Repeat for Credit
N

Requisites
Prerequisite: GEOL 640, co-enrollment in GEOL 640, or Instructor consent

Typically Offered
Fall

GEOL 745 - Exploration Geophysics

Credits 3

Principles and applications of seismic, gravity, magnetic, and other geophysical methods used in energy, mining, and other industries to locate subsurface targets of interest.

Note
Two hours recitation and two hours lab a week.

Repeat for Credit
N

Requisites
Prerequisite: GEOL 742

Typically Offered
On sufficient demand

GEOL 747 - Introduction to Matlab

Credits 3

Practical introduction to Matlab designed for students who may have limited experience with data processing. Includes handling data (import/export from other softwares/format), data structure, data processing, data visualization (2D, 3D graphs), designing functions, selection statements, loops, programming, descriptive

statistics, plots for exploratory data analysis, fit probability distributions to data, regression analysis.

Repeat for Credit
N

Typically Offered
Spring

GEOL 750 - Geologic Evolution of Planet Earth

Credits 3

Integration of the various geologic disciplines into a broad-based understanding of the history and dynamics of the earth.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Co-enrolled in other Geology BA or BS courses or Instructor consent

Typically Offered
On sufficient demand

GEOL 760 - Geochemical and Biogeochemical Modeling

Credits 3

Use of popular geochemical modeling software to analyze geochemical and biogeochemical reactions in aqueous environments.

Repeat for Credit
N

Requisites
Prerequisite: CHM 110 and CHM 111 Recommended Foundation Course: GEOL 605.

Typically Offered
Fall

K-State 8
Empirical and Quantitative Reasoning

K-State 8 Tag 2
Natural and Physical Sciences

GEOL 770 - Subsurface Methods

Credits 3

Principles and applications of subsurface geology.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GEOL 530 or concurrent enrollment.

Typically Offered

Spring

GEOL 790 - Problems in Geology

Credits 0-18

Work is offered in mineralogy, paleobiology, paleoecology, stratigraphy, structural geology, igneous, metamorphic, and sedimentary petrology, geomorphology, planetary geology, hydrogeology, geochemistry, and isotope geology.

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for problem undertaken.

Typically Offered

Fall, Spring, Summer

GEOL 800 - Graduate Seminar in Geology

Credits 1-18

Topics in geology, geochemistry, and geophysics.

Repeat for Credit

Y

Typically Offered

Fall, Spring

GEOL 801 - Advanced Paleobiology

Credits 2

Detailed study of the functional morphology, ecology, biogeography, evolution, and classification of selected groups.

Repeat for Credit

Y

Requisites

Prerequisite: GEOL 704 or GEOL 705.

Typically Offered

On sufficient demand

GEOL 802 - Mineral Exploration for a Sustainable Future

Credits 3

Investigates basic mineral exploration techniques required for a sustainable future for society. Students gain experience in different geological, geophysical (induced polarization, magnetic and radiometry surveys), and geochemical techniques employed by the industry, with specific emphasis on critical materials used for the energy transition. Multidisciplinary approach used to interpret large datasets to generate exploration targets which can be sustainably obtained are taught as well as guest lectures from industry professionals.

Note

This course includes a required 5-day field trip

Repeat for Credit

N

Requisites

Pre-requisite: GEOL 503

Typically Offered

On sufficient demand

GEOL 804 - Igneous and Metamorphic Petrology

Credits 2 - 4

Selected problems in the petrogenesis of igneous and metamorphic rocks.

Note

Two to three hours lecture and one to three hours lab per week.

Repeat for Credit

Y

Requisites

GEOL 503

Typically Offered

On sufficient demand

GEOL 805 - Advanced Igneous and Metamorphic Petrology**Credits 3**

Explores the geochemical, petrographic, and petrologic characteristics of the common igneous and metamorphic rocks, building on concepts learned in introductory-level petrology courses.

Repeat for Credit

Y

Requisites

Prerequisite: GEOL 503 or equivalent.

Typically Offered

Fall

GEOL 806 - Sedimentary Petrology**Credits 4**

Petrography, classification, and origin of terrigenous and chemical sedimentary rocks.

Note

Three hours lecture and three hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: GEOL 630

Typically Offered

On sufficient demand

GEOL 807 - Advanced Sedimentary Petrology**Credits 2**

Field and laboratory study of selected problems in the origin of sedimentary rocks.

Repeat for Credit

Y

Requisites

Prerequisite: GEOL 806.

Typically Offered

On sufficient demand

GEOL 810 - Isotope Geology**Credits 3**

The principal goal of the course is to understand how variations in radiogenic and stable isotopic abundances can be used to understand Earth processes, including evolution of the solid Earth, the hydrological cycle, the carbon cycle, and climate change.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

GEOL 503 or Instructor Consent

Typically Offered

Fall

GEOL 825 - Advanced Engineering Geology and Petrophysics**Credits 3**

Students learn advanced concepts with broad applications in the oil/gas industry, analyze actual experimental data, and use state-of-the-art software in the areas of unconventional reservoirs.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220

Typically Offered

Spring

Crosslisted
GEOL 625

GEOL 830 - Geotectonics

Credits 3

Origin and history of major tectonic elements of the earth, especially their interaction through time.

Repeat for Credit
Y

Requisites
Prerequisite: GEOL 530.

Typically Offered
On sufficient demand

GEOL 835 - Advanced Petroleum Exploration, Imperial Barrel Award Competition

Credits 3

Evaluation of exploration prospects in frontier and underdeveloped petroleum provinces using borehole-derived and geophysical data. Team taught course that uses industry provided datasets and current data management and interpretation software to reach drill or no-drill decisions based on science, risk analysis, and economics.

Repeat for Credit
N

Typically Offered
On sufficient demand

GEOL 870 - Groundwater Contaminant Remediation

Credits 3

Identification and mensuration of groundwater contaminants and consideration of means for their remediation strategies.

Repeat for Credit
N

Requisites
Prerequisite: GEOL 711, GEOL 611, MATH 633 and MATH 634.

Typically Offered
On sufficient demand

GEOL 872 - Biogeochemistry of Soils and Sediments

Credits 3

Review and discussion of current understanding of the chemical, biological, and mineralogical interactions of groundwater, soils, shallow and deep sediments. This course will deal with biotic controls on chemistry of the environment [and] with the geochemical control of the structure and function of ecosystems.

Repeat for Credit
N

Requisites
Prerequisite: GEOL 711, GEOL 605.

Typically Offered
On sufficient demand

GEOL 880 - Clay Mineralogy

Credits 3

Geologic occurrences, physical properties, atomic structures, and the identification of clay minerals, including thermal analytical methods and the study of X-ray diffraction patterns.

Note
Two hours recitation and three hours lab a week.

Repeat for Credit
Y

Requisites
Prerequisite: GEOL 503 or GEOL 711 or AGRON 205

Typically Offered
On sufficient demand

GEOL 890 - Advanced Seismology

Credits 3

Mechanics of faulting and earthquakes; seismotectonics; advanced data analysis; seismic wave propagation in three-dimensionally inhomogeneous media; earthquake prediction and hazard analysis.

Note

One hour recitation and four hours lab per week.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 114 and GEOL 640

Typically Offered

On sufficient demand

GEOL 898 - Master's Report Research

Credits 1-2

Research or practice of geology summarized in a scholarly report.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment in geology option B and permission of instructor.

Typically Offered

Fall, Spring, Summer

GEOL 899 - Master's Thesis Research

Credits 1-6

Research in geology culminating in a master's thesis.

Repeat for Credit

Y

Requisites

Prerequisite: Enrollment in geology option A and permission of instructor.

Typically Offered

Fall, Spring, Summer

GEOL 999 - Research in Geology, PhD

Credits 1-18

Research in Geology, PhD

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GERON 215 - Introduction to Gerontology

Credits 3

Introductory exploration of diverse biological, psychological, and sociological factors that impact the aging process across the life course.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

GERON 425 - Introduction to Physical Health & Well-Being of Older Adults

Credits 3

Introductory examination of processes involved in physiological aging that considers the effects of normal aging, chronic and acute disease, and environmental factors on systems of the body. Focus on health promotion and practical application with diverse populations to prepare students for careers in the field of aging.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198

Typically Offered

Spring-Odd Years

K-State 8

Natural and Physical Sciences

GERON 430 - Introduction to Mental Health & Aging

Credits 3

Introductory exploration of mental health and aging utilizing a variety of theoretical perspectives within an overall systems framework. Major emotional, mental, and psychiatric functions and problems encountered in old age will be examined along with evidence-based approaches to assessment, intervention, and treatment.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

GERON 501 - Culture Change in Long-Term Care

Credits 1

This course will cover the basic characteristics of traditional and culture change nursing home models. Students will learn about the various processes of organizational change, the steps toward change, and potential regulatory, environmental and social barriers to major change. The course will include discussions about the necessity to change the way care is provided in such areas as dining, bathing, family/relationships, and environment. This overview is recommended as the first course for students unfamiliar with culture change and is delivered on-line.

Repeat for Credit

N

Typically Offered

Fall

GERON 502 - Measuring Change in Long-Term Care

Credits 1

Topics covered will include process and outcome measures in nursing home change as well as the importance of and the utility of measurement for the advancement of quality of life issues in long-term care. Students will gain an understanding of how regulatory support will be more likely to occur if

culture change features can show a cost savings as well as improvements in the quality of life of residents.

Repeat for Credit

N

Typically Offered

Fall

GERON 503 - Creating Home in Long-Term Care

Credits 1

Students will gain a better understanding of the interdependent networks within nursing homes, environmental factors in the development of community and culture in a nursing home, learn how fostering resident, family and staff interactions can improve quality of life for all those groups, understand the role of structural redesign and innovation, and consider how environmental change can improve relationships within the larger community.

Repeat for Credit

N

Typically Offered

Spring

GERON 504 - Strengthening Staff in Long-Term Care

Credits 1

Topics covered will include the development of deeper relational bonds within the nursing home environment, benefits of permanent staffing as a key component of building a relationship centered culture, how these types of changes can benefit and empower staff, and models for bridging cultural divides between long-term care administrators and staff to benefit the residents. A review of the impact of traditional models of managed care that focus on providing food, shelter, and medical attention and factors that hinder purposeful, proactive interactions between residents, families and staff.

Repeat for Credit

N

Typically Offered

Fall

GERON 505 - Dining in Long-Term Care

Credits 1

Students will develop an appreciation of the impact dining has on the quality of social, physical and emotional health and quality of life of nursing home residents, become aware of the meanings/customs that residents may associate with the dining experience, recognize the importance of the dining experience in the overall culture of the home and develop an understanding of various institutional dining styles.

Repeat for Credit

N

Typically Offered

Spring

GERON 506 - Activities in Long-Term Care

Credits 1

A review of common activities in long term care, their importance in resident care, the importance of meaningful activity and relationships, how the long-term care culture impacts resident individuality/choice, and individualized care plans.

Repeat for Credit

N

Typically Offered

Spring

GERON 516 - Introduction to Aging Veterans

Credits 3

An introductory overview to the unique issues involved with aging military veterans and their families. Topics include military structure, major United States conflicts, personnel issues resulting from conflicts since WWII, Veteran benefits, cultural issues, veteran health issues and application to working with aging veterans.

Repeat for Credit

N

Typically Offered

Fall

GERON 525 - Introductory Topics in Gerontology

Credits 1-3

Introductory study of selected topics in gerontology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GERON 530 - Introduction to Sexuality & Aging

Credits 3

Introductory exploration of sexual development and expression across the lifespan with an emphasis on older adults. Topics include misconceptions about older adult sexuality, physiological changes, social barriers and challenges, sexual diversity, policy and access considerations, and impacts of disease and cognitive decline.

Repeat for Credit

N

Typically Offered

Summer-Even Years

GERON 540 - Introduction to Creativity & Aging

Credits 3

Introductory overview of the transformation of the aging brain that can lead to changes in creative output over time. Students will grow an appreciation for creativity produced and inspired by older people while simultaneously exploring their own creative potential.

Repeat for Credit

N

Typically Offered
Spring-Even Years

GERON 574 - Introduction to Environments & Aging

Credits 3

Introductory interdisciplinary exploration of preferences and needs of older adults' physical environments. Emphasis placed on successful environmental adaptations, design and management of housing, institutional facilities, neighborhoods, and communities.

Repeat for Credit
N

Typically Offered
Summer-Odd Years

GERON 575 - Introduction to Diversity in the Aging Experience

Credits 3

Introductory exploration of aging in the contexts of the social determinants of health and diversity, equity, inclusion, and belonging.

Repeat for Credit
N

Typically Offered
Fall, Spring

GERON 576 - Introduction to Program Design, Implementation, & Evaluation in Gerontology

Credits 3

Introductory study of selecting, adapting, designing, implementing, and evaluating effective prevention and intervention programs for older adults.

Repeat for Credit
N

Typically Offered
Spring

GERON 577 - Introduction to Policy & Advocacy in Gerontology

Credits 3

Introductory examination of complex and interrelated policies and programs that impact the well-being of older adults.

Repeat for Credit
N

Typically Offered
Fall, Spring

GERON 578 - Introduction to Aging Family Dynamics & Caregiving

Credits 3

Introductory exploration of inter-generational, interpersonal, and care-giving relationships during the middle and later years of the family life cycle.

Repeat for Credit
N

Typically Offered
Summer-Even Years

GERON 605 - Practicum in Gerontology

Credits 1-3

Supervised field experience in an aging-related setting as a practical application of gerontological knowledge and skills.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

GERON 610 - Seminar in Long-Term Care Administration

Credits 3

Encourages the development of leadership skills within long-term care organizations by covering administrative principles involved in planning, organizing, and directing and includes in-depth exposure to the standards and regulations governing long-term care, social and medical models of care, and the process of change within these organizations.

Repeat for Credit

N

Typically Offered

Other

GERON 615 - Long-Term Care Administration Internship

Credits 1-9

Supervised field experience in an approved long-term care setting designed to meet the requirements for the National Association of Long-Term Care Administrator Board exam. Most students who successfully complete this experience will be eligible to sit for the necessary national and/or state administrator exams.

Repeat for Credit

Y

Requisites

Prerequisite: GERON 610 and Instructor Permission.

Typically Offered

Fall, Spring, Summer

GERON 620 - Independent Study in Gerontology

Credits 1-3

Independent study on topics in gerontology.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GERON 625 - Advanced Physical Health & Well-Being of Older Adults

Credits 3

Advanced examination of the processes involved in physiological aging that considers the effects of normal aging, chronic and acute disease, and environmental factors on systems of the body. Focuses on health promotion and practical application with diverse populations to prepare students for careers in the field of aging.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

GERON 630 - Advanced Mental Health & Aging

Credits 3

Advanced exploration of mental health and aging utilizing a variety of theoretical perspectives within an overall systems framework. Major emotional, mental, and psychiatric functions and problems encountered in old age are examined along with evidence-based approaches to assessment, intervention, and treatment.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

GERON 700 - Gerontechnology

Credits 3

An interdisciplinary approach to the understanding of the biological, environmental, and social spheres where technology and gerontology meet. Topics include the interrelationship between population dynamics and technological change, technological research and devices that may improve elders' lives, particular issues for rural communities, and the social and cultural meanings, challenges, and benefits of gerontechnologies. Particular emphasis will be given to placing both population aging and technological change in a broader social perspective.

Repeat for Credit

N

Typically Offered

Spring

GERON 711 - Advanced Death and Dying

Credits 3

An in-depth evaluation of the experience of death, dying, loss and bereavement through a multi and cross-cultural lens. Emphasis will be given to strategies for working with older adults and their support systems. These strategies include coping and preparation for end of life-process and advanced care planning. Students will also be encouraged to share their own experiences with death, dying and coping.

Repeat for Credit

N

Typically Offered

Fall

GERON 715 - Aging Veterans

Credits 3

Introduction to the unique issues involved with aging military veterans. Topics include basic military structure, media portrayal of war, personnel issues resulting from American conflicts since WWII, veteran benefits, cultural issues, veteran health issues and navigating a career within the U.S. federal system.

Repeat for Credit

N

Typically Offered

Fall

GERON 720 - Design for Aging in the Modern World

Credits 3

This course will explore the dynamic process of aging and the role of the built environment in the; multidimensional as well as multi-spherical spaces of life-course occurring in the family, work, education, leisure as well as other domains and its relationship to the environment from a life-course perspective. The emphasis on aging and the environment will focus on how individuals and groups manage interactions associated with the social and physical settings. The course will develop students' foundational knowledge in the theories of aging, environment and behavior, and the ecology of the aging process. These theories will be used as the basis to discuss and debate

contemporary issues that confront an aging society. Three levels of the environment will be explored: the microenvironment including those products that people of all ages interact with on a daily basis; the meso (or middle) environment that includes residential and work settings that shape our relationships with family, friends, and associates, and lastly at the macro environment of our communities where people are connected to the larger social settings, services and supports that make up our cities and rural settings, both from a national and international perspective. Each of the sections covered will acknowledge how behavior is influenced by the environment and spans the life-cycle.

Repeat for Credit

N

Typically Offered

Fall

GERON 725 - Advanced Topics in Gerontology

Credits 1-3

Advanced study of selected topics in gerontology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GERON 730 - Advanced Sexuality & Aging

Credits 3

Advanced exploration of sexual development and expression across the lifespan with an emphasis on older adults. Topics include misconceptions about older adult sexuality, physiological changes, social barriers and challenges, sexual diversity, policy and access considerations, and the impacts of disease and cognitive decline.

Repeat for Credit

N

Typically Offered

Summer-Even Years

GERON 740 - Advanced Creativity & Aging

Credits 3

Advanced overview of transformation of the aging brain that can lead to changes in creative output over time. Students will grow an appreciation for creativity produced and inspired by older people while simultaneously exploring their own creative potential.

Repeat for Credit

N

Typically Offered

Spring-Even Years

GERON 772 - Adult Development and Aging**Credits 3**

Exploration of the biological, psychological, and sociological aspects of individual and interpersonal development in aging from a life course perspective.

Repeat for Credit

N

Typically Offered

Fall

GERON 773 - Physical Health and Nutrition in Aging**Credits 3**

This course identifies the basic physiologic changes during aging and their impacts in health and disease. The focus will be on successful aging with special emphasis on physical activity and nutrition. Practical application to community settings is addressed.

Repeat for Credit

N

Requisites

Prerequisite: Enrolled in Gerontology (MS) or Gerontology Graduate Certificate.

Typically Offered

Fall

GERON 774 - Advanced Environments & Aging**Credits 3**

Advanced interdisciplinary exploration of preferences and needs of older adults' physical environments. Emphasis placed on successful environmental adaptations, design and management of housing, institutional facilities, neighborhoods, and communities.

Repeat for Credit

N

Typically Offered

Summer-Odd Years

GERON 775 - Advanced Diversity in the Aging Experience**Credits 3**

An advanced exploration of aging in the contexts of the social determinants of health and diversity, equity, inclusion, and belonging.

Repeat for Credit

N

Typically Offered

Fall, Spring

GERON 776 - Advanced Program Design, Implementation, & Evaluation in Gerontology**Credits 3**

Advanced study of selecting, adapting, designing, implementing, and evaluating effective prevention and intervention programs for older adults.

Repeat for Credit

N

Typically Offered

Spring

GERON 777 - Advanced Policy & Advocacy in Gerontology**Credits 3**

Advanced examination of complex and interrelated policies and programs that directly and indirectly impact the well-being of older adults.

Repeat for Credit

N

Typically Offered

Fall, Spring

GERON 778 - Advanced Aging Family Dynamics & Caregiving**Credits 3**

Advanced exploration of intergenerational, interpersonal, and caregiving relationships during the middle and later years of the family life cycle.

Repeat for Credit

N

Typically Offered

Summer-Even Years

GERON 779 - Professional Seminar in Gerontology**Credits 3**

Students apply and integrate knowledge gained in earlier courses and strengthen skills in ethical decisions-making through applications in gerontology-related areas such as advocacy, professionalism, family and workplace issues. Students from a variety of professions bring their unique perspective to bear on topics of common interest.

Repeat for Credit

N

Typically Offered

Summer

GERON 799 - Professional Application in Gerontology**Credits 1-3**

Individual study that forms the basis of the master's culminating experience.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRAD 700 - Graduate Education Abroad**Credits 0-18**

"Education abroad" is a **chance to pursue your college studies in a foreign country**. Students attend lectures or carry out research at a foreign university or through K-State's education-abroad program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRAD 740 - Water and Society: Interdisciplinary Foundation**Credits 3**

Interdisciplinary course focused on the natural and human elements of water resource systems; Introduction to traditional disciplinary procedures, theory and models; Cross-disciplinary approaches to understand and quantify dynamic system relationships; Case study for integrated problem solving, management and policy.

Note

Three hours recitation.

Repeat for Credit

N

Requisites

Prerequisite: Senior or graduate standing.

Typically Offered

Spring

GRAD 820 - Leadership Practicum**Credits 3**

Develops the connections between leadership theory and practice. By conducting a practicum project, students demonstrate the ability to apply concepts and ideas from the study of leadership to a practical leadership problem within an organization.

Repeat for Credit

Y

Requisites

Prerequisite: LEAD 801.

Typically Offered

Fall, Spring

GRAD 850 - Foundations of Homeland Security**Credits 3**

This introductory course provides the foundational framework for the Homeland Security program and surveys the major policies, practices, concepts, and challenges confronting practitioners in Homeland Security. Topics include an overview of threats to homeland security and an introduction to the roles, functions, and policies of organizations and government structures at the federal, tribal, state, and local levels. The National Response Framework (NRF) and National Incident Management System (NIMS) are studied.

Repeat for Credit

N

Typically Offered

Fall

GRAD 851 - Homeland Security Threats**Credits 3**

Students will understand the various types of disasters, methodologies of disaster recovery, and roles and responsibilities of Federal, State, and local government. It will address the impact of disasters, including acts of terrorism, to include economic, physical, emotional, and psychological effects. Students will understand how disasters affect society, risk mitigation strategies, and how the levels of government coordinate to address disaster impacts.

Repeat for Credit

N

Typically Offered

Fall

GRAD 852 - Organizations Amid Crisis**Credits 3**

The fundamental concepts and subject areas necessary for an organization to address in preparing for catastrophic emergency events and other events encountered by organizations as a result of homeland security are examined. It outlines the organization and practical steps required to develop an effective crisis response plan. The relationships between private and public service organizations, including governmental, nonprofit, and hybrid types are studied.

Repeat for Credit

N

Typically Offered

Fall

GRAD 853 - Homeland Security Process and Management**Credits 3**

Students will understand strategic, political, legal, and organizational challenges associated with the defense of the U.S. homeland, efforts that are under way to meet these challenges, and possible policy options. Intergovernmental responsibilities and relationships of local, state, and federal agencies in an "all-hazards" approach to disasters are emphasized. Major policy and regulatory issues of emergency management, including the role of the military in response to disaster operations, are examined.

Repeat for Credit

N

Typically Offered

Fall

GREEK 101 - Classical Greek I**Credits 5**

An introduction to the grammar, vocabulary, and structure of Attic Greek.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GREEK 102 - Classical Greek II

Credits 5

Develops reading and comprehension skills in the language of classical Athens, with a focus on further developing knowledge of grammar, vocabulary, and reading. Critical reading of texts in the original Greek.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GREEK 301 - Intermediate Greek-Prose

Credits 3

The reading of classical Greek prose at an intermediate level.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GREEK 302 - Intermediate Greek-Poetry

Credits 3

Intermediate readings in classical Greek poetry. Renewed focus on Greek grammar, style, and vocabulary. Introduces a new dialect of Greek. Critical reading of texts.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GRMN 002 - Orientation for Summer School Program

Credits 0

Orientation for Summer School Program

Repeat for Credit

N

Typically Offered

Other

GRMN 101 - German I

Credits 4

Develops basic language skills and cultural awareness to function in everyday situations in German-speaking communities, for students with little to no prior German experience. Conducted in German with practice in speaking, listening, reading, and writing.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GRMN 102 - German II

Credits 4

Continuation to the introduction of modern German. Practice of the spoken language, additional experience in reading and with a variety of additional media.

Repeat for Credit

N

Requisites

Recommended Prerequisite: GRMN 101 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GRMN 201 - German III**Credits 3**

Conclusion of the introduction to modern German.
Continued practice of the spoken language, reading, and additional experience with a range of audio and visual media.

Repeat for Credit

N

Requisites

Recommended Prerequisite: GRMN 102 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GRMN 222 - Elementary German Conversation IIIA**Credits 2**

Practice in beginning conversational German and review of grammar.

Note

Courses not open to fluent speakers of German. Course normally taken concurrently with German III.

Repeat for Credit

N

Requisites

Prerequisite: GRMN 122 or equivalent.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

GRMN 301 - German IV**Credits 3**

Review of select points of German language structure accompanied by practice in conversation, speaking, reading, and writing, as well as additional experience with audio and visual media.

Repeat for Credit

N

Requisites

Recommended Prerequisite: GRMN 201 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GRMN 398 - Intermediate Studies in German**Credits 1-18**

Offered only to participants in study abroad programs.

Repeat for Credit

Y

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

GRMN 500 - K-State in Berlin**Credits 3**

Ten-day, faculty-led study abroad program in Berlin and Potsdam. Focuses on German cultural memory through Berlin's architectural topography. Visits to, and discussions of, historical sites and buildings. Prior to departure,

students attend meetings on the K-State campus and complete assignments to prepare for travel.

Repeat for Credit

N

Typically Offered

Summer

GRMN 503 - German Literature in Translation

Credits 3

Selected readings in English from such major German authors as Mann, Brecht, Hesse, Grass, and Kafka.

Repeat for Credit

N

Typically Offered

Other

GRMN 510 - German Film

Credits 3

In English. Addresses various topics within a German historical-cultural context. Students will consider what makes cinema a distinct form of artistic expression.

Note

May be taken for major credit if assignments and discussion are completed in German.

Repeat for Credit

N

Typically Offered

Other

GRMN 515 - Topics in German Cultural Studies

Credits 3

In English. Specific course content will vary by semester and instructor.

Note

May be taken for German major credit.

Repeat for Credit

Y

Typically Offered

Other

GRMN 520 - Readings in German

Credits 3

Practice in reading a variety of literary, journalistic, and specialized texts.

Repeat for Credit

N

Requisites

Prerequisite: GRMN 223 or equivalent.

Typically Offered

Other

GRMN 521 - Introductory Topics in German Literature and Culture of the 18th and 19th century

Credits 3

Topics courses constitute a sequence of introductory period studies covering the chronological range of German literature from about 1750 to the present. Within these historical periods, the specific course contents will vary by semester and instructor.

Repeat for Credit

Y

Typically Offered

Other

GRMN 522 - Introductory Topics in German Literature and Culture of the 20th and 21st century

Credits 3

Topics courses constitute a sequence of introductory period studies covering the chronological range of German literature from about 1750 to the present. Within these historical periods, the specific course contents will vary by semester and instructor.

Repeat for Credit

Y

Typically Offered
Other

GRMN 523 - German Composition

Credits 3

Course emphasizes writing and includes select grammar review. Course not open to students whose competence has been demonstrated in the language at this level.

Repeat for Credit
N

Requisites
Prerequisite: GRMN 223 or equivalent.

Typically Offered
Other

GRMN 524 - German for Reading Knowledge I

Credits 3

The grammar and syntax of German and the reading of basic material selected from modern German texts. (This course is designed for students who need to be able to read German.).

Repeat for Credit
N

Typically Offered
Other

GRMN 525 - German for Reading Knowledge II

Credits 3

Continued reading of material from modern German texts. (This course is designed for students who need to be able to read German.).

Repeat for Credit
N

Typically Offered
Other

GRMN 526 - Business German

Credits 3

Advanced grammar necessary for adequate oral and written expression in international business and diplomatic situations, including specialized terminology, conversation and discussion and translation. Cultural aspects of business are also considered.

Repeat for Credit
N

Requisites
Prerequisite: GRMN 223 or equivalent.

Typically Offered
Other

GRMN 527 - Advanced German Conversation

Credits 3

Course emphasizes proficiency in oral expression and includes select grammar review. Course not open to students whose competency has been demonstrated in the language at this level.

Repeat for Credit
Y

Requisites
Prerequisite: GRMN 223 or equivalent.

Typically Offered
Other

GRMN 528 - Introductory Topics in German Language and Linguistics

Credits 3

Introduction to topics in German Linguistics, with special emphasis on the connection between language structure and use or language structures and learning.

Repeat for Credit
Y

Requisites
Prerequisite: GRMN 301.
Corequisite: GRMN 523 or GRMN 527 or GRMN 526 should be taken before GRMN 528 or concurrently with

GRMN 528.

Typically Offered

Fall

GRMN 529 - Special Studies in German

Credits 1-18

Special Studies in German

Note

Consent of department head and instructor involved.

Repeat for Credit

Y

Typically Offered

Other

GRMN 530 - German Cultural Studies and History

Credits 3

This course addresses cultural and historical topics not confined to a single period. Specific course content will vary by semester and instructor. It may emphasize cross-national subjects, the development of a theme or discourse over time, new perspectives from social, intellectual, or cultural studies, or non-traditional texts and topics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period.

Repeat for Credit

N

Requisites

Prerequisite: One prior or concurrent 500-level German language class or equivalent.

Typically Offered

Other

GRMN 701 - Topics in Eighteenth Century German Literature and Culture

Credits 3

Topics courses are designed for undergraduates and graduate students. These courses constitute a sequence of

period studies covering the chronological ranges of German speaking literature and culture. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the period. Each semester's offerings will be specifically described before each enrollment period in university and department publications.

Repeat for Credit

Y

Requisites

Prerequisite: One prior 500-level German literature course.

Typically Offered

Fall, Spring, Summer

GRMN 702 - Topics in Nineteenth Century German Literature and Culture

Credits 3

Topics courses are designed for undergraduates and graduate students. These courses constitute a sequence of period studies covering the chronological ranges of German speaking literature and culture. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the period. Each semester's offerings will be specifically described before each enrollment period in university and department publications.

Repeat for Credit

Y

Requisites

Prerequisite: One prior 500-level German literature course.

Typically Offered

Fall, Spring, Summer

GRMN 703 - Topics in Early Twentieth Century German Literature and Culture

Credits 3

Topics courses are designed for undergraduates and graduate students. These courses constitute a sequence of period studies covering the chronological ranges of German

speaking literature and culture. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the period Each semester's offerings will be specifically described before each enrollment period in university and department publications.

Repeat for Credit

Y

Requisites

Prerequisite: One prior 500-level German literature course.

Typically Offered

Fall, Spring, Summer

GRMN 704 - Topics in German Literature and Culture since 1945**Credits 3**

Topics courses are designed for undergraduates and graduate students. These courses constitute a sequence of period studies covering the chronological ranges of German speaking literature and culture. Within these historical periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the period Each semester's offerings will be specifically described before each enrollment period in university and department publications.

Repeat for Credit

N

Requisites

Prerequisite: One prior 500-level German literature course.

Typically Offered

Fall, Spring, Summer

GRMN 705 - Topics in Twentieth and Twenty-First Century German Literature and Culture**Credits 3**

Topics courses are designed for undergraduates and graduate students. These courses constitute a sequence of period studies covering the chronological ranges of German speaking literature and culture. Within these historical

periods, the specific course contents will vary by semester and instructor. They may emphasize literary figures and movements, historical and cultural contexts, or different genres and forms within the period Each semester's offerings will be specifically described before each enrollment period in university and department publications.

Note

Each semester's offerings will be specifically described before each enrollment period in university and department publications.

Repeat for Credit

Y

Requisites

Prerequisite: One prior 500-level German literature course.

Typically Offered

Fall, Spring, Summer

GRMN 720 - Open Topics Seminar in German Language and Linguistics**Credits 3**

Addresses topics in German Linguistics. It may emphasize a specific area of linguistics, a specific research approach, or the connection between language and society. Courses are repeatable with change of subject matter.

Repeat for Credit

Y

Requisites

Prerequisite: At least one GRMN 500-level course preferably GRMN 528.

Typically Offered

Fall, Spring

GRMN 728 - History of the German Language**Credits 3**

A study of the development of the sounds, forms and syntax of standard German.

Repeat for Credit

N

Typically Offered

Other

GRMN 729 - Open Topics Seminar in German Literature and Culture**Credits 3**

Open Topics courses are designed for undergraduates and graduate students. Course addresses topics not confined to a single period in a national literature. Specific course content will vary by semester and instructor. It may emphasize cross-national subjects, literary or cultural criticism or theory, works of one or a pair of related authors, the development of a theme or genre over time, new perspectives from social, intellectual, or cultural studies, or non-traditional texts and topics. Each semester's offerings will be described more specifically in university and department publications before each enrollment period.

Note

The courses are repeatable with change of subject matter.

Repeat for Credit

Y

Requisites

Prerequisite: One prior 500-level German literature course.

Typically Offered

Other

GRMN 731 - Advanced German: Speaking and Writing**Credits 3**

Course combines practice in speaking, writing, and reading, and select advanced grammar review. Course not open to students whose competence has been demonstrated in the language at this level.

Repeat for Credit

Y

Requisites

Prerequisite: GRMN 523 and GRMN 527 or equivalent.

Typically Offered

Other

GRMN 740 - German Culture and Literature in Second-Language Learning**Credits 3**

Analysis and interpretation of cultural and literary text from German-speaking countries, with emphasis on the development of interpretive skills and materials, and their application to the German curriculum at all levels.

Note

Normally taken concurrently with German IV.

Repeat for Credit

Y

Requisites

Prerequisite: One prior 500-level German course.

Typically Offered

Other

GRMN 799 - Problems in Modern Languages**Credits 1-18**

Problems in Modern Languages

Repeat for Credit

Y

Typically Offered

Other

GRMN 898 - Master's Report**Credits 1-2**

A written report of either research or problem work on a topic in the major field.

Note

Consult of major professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRMN 899 - Research in Modern Languages**Credits 1-18**

Research in Modern Languages

Repeat for Credit

Y

Typically Offered

Other

GRSC 100 - Foundations in Grain Science and Industry**Credits 1**

An introduction to grain science and industry; general freshman orientation; policies; student organizations; study skills and time management; departmental degree programs, and careers.

Note

Required of all Freshmen majoring in Bakery Science and Management, Feed Science and Management, and Milling Science and Management.

Repeat for Credit

N

Requisites

Prerequisite: Required of all freshmen in Grain Science and Industry.

Typically Offered

Fall

GRSC 101 - Fundamentals of Grain Processing**Credits 3**

This is an introductory course to grains and their processing/utilization in food and non-food products.

Note

Intended for non-majors only.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

GRSC 112 - Feed and Pet Food Experience**Credits 1**

Designed to provide a hands-on experience in the feed and pet food processes. The student will learn about the safety programs, quality and standard operating procedures used in the animal feed and pet food industries.

Note

Three hours lab per week.

Repeat for Credit

N

Typically Offered

Spring

GRSC 150 - Principles of Milling**Credits 2**

Introduction to grain and feed milling processes.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: MATH 100

Typically Offered

Fall, Spring

GRSC 151 - Principles of Milling Laboratory**Credits 1**

A laboratory course to accompany Principles of Milling (GRSC 150). Laboratory exercises in grain and feed milling processes.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 150 or concurrent enrollment. BSM, FSM and MSM majors have to take GRSC 150 and GRSC 151 concurrently.

Typically Offered

Fall, Spring

GRSC 200 - Topics in Grain Science

Credits 0-3

Special topics, studies, and activities in grain science not completely taught in other courses.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRSC 201 - Fundamental Baking Calculations

Credits 1

The course is designed to provide students with an understanding of the type of mathematical calculations used in the baking industry. It will cover ratio and proportion, true percent, baker's percent, how to convert a straight dough to a sponge and dough, proper water temperature calculations, specific gravity as it applies to cake making, density, specific volume as it applies to bread making, flour blending calculations in order to achieve a specific flour protein content, flour calculations for proper baking performance and purchasing, major ingredient substitutions, pie filling calculations, parts per million calculations, and baking powder neutralization values.

Note

This course will be offered as a 20-module distance education course.

Repeat for Credit

N

Requisites

Prerequisite: This class has no prerequisites, and can be taken by an incoming freshman.

Typically Offered

Fall, Spring, Summer

GRSC 210 - CAD Flow Sheets for Grain Processes

Credits 3

The course is designed to teach students the basic concepts of professional 2D drawing designs and drafting using AutoCAD. By the end of the semester, the students will be able to use AutoCAD for preparing process flow drawings and interpret a grain processing flow.

Note

Two three-hour lecture/demonstrations/studio per week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 150 or consent of instructor.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

GRSC 301 - Baking Fundamentals: The Art and Science of Baking

Credits 3

This introductory course explores the art and science of baking. Students will discover the basic scientific principles that explain how both yeast and chemically leavened bakery products are made. They will learn the products, tools, techniques and aesthetics of making breads, cakes, sweet goods, doughnuts, and cookies.

Note

Two (2) hour classes a week (one lecture the other discussion of products made in lab that week)

One (1) three-hour lab a week (scheduled in between lecture hours)

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

GRSC 310 - Materials Handling

Credits 2

The course is designed to introduce students to how materials including grains, ingredients, mixes and finished products are physically moved and handled in the receiving, storage, formulation, production and shipping of grain related products.

Note

Two two-hour studio sessions incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 150 and GRSC 210.

Recommended prerequisites: PHYS 113, MATH 205.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

GRSC 312 - Introduction to Feed and Pet Food Processing**Credits 3**

Introduction to animal feed and pet food manufacturing, including principles of conveying, grinding, mixing, pelleting, and other processing techniques, the formulation of concentrates, premixes, and rations.

Note

Three hours lecture per week.

Repeat for Credit

N

Typically Offered

Spring

GRSC 313 - Intro to Feed and Pet Food Processing Lab**Credits 1**

This course provides students with hands-on experience in the fundamental processes used in feed and pet food manufacturing. Through laboratory exercises, students will

explore key operations such as ingredient preparation, grinding, mixing, pelleting, canning, baking, freeze drying, extrusion, and packaging. Emphasis is placed on understanding equipment operation, safety protocols, and troubleshooting in a production setting. This applied learning approach reinforces theoretical knowledge from lecture-based courses and prepares students with the technical skills necessary for careers in the feed and pet food industry.

Repeat for Credit

N

Requisites

Pre-Requisite or Co-Requisite: GRSC 312

Typically Offered

Fall-Odd Years

GRSC 405 - Grain Analysis Techniques**Credits 2**

Principles and instrumentation available for testing cereal and other grains and their food and feed products.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: CHEM 230, BIOCH 265 or CHM 350 and CHM 351, and STAT 225.

Typically Offered

Spring

GRSC 491 - Faculty-Led Study Abroad**Credits 1-3**

Seminar and travel course designed to prepare students before the experience and for students to analyze, critique, and report their experiences of an international experience associated with study tours or short courses.

Note

Consent of instructor for undergraduates, consent of major professor for graduate students

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

GRSC 499 - Undergraduate Research in Grain Science

Credits 0-3

This course is an opportunity to earn college credit while conducting an independent research project. The overall objective of the course is to introduce students to scientific research methods and procedures in grain science and related areas through hands-on experience and individual mentoring. Students will learn how to design, conduct, analyze, and present scientific research.

Note

Variable credit. Students are expected to invest at least 3 hours of effort per week for every hour of credit enrolled. A GSI faculty must agree to serve as research advisor/mentor prior to enrollment. A list of participating faculty and project areas will be available.

Repeat for Credit

Y

Requisites

Prerequisites: Sophomore, junior or senior standing in BSM, FSM, or MSM; minimum GPA of 2.5/4.00.

Typically Offered

Fall, Spring, Summer

GRSC 500 - Milling Science I

Credits 2

Principles and practices of wheat flour milling with full-scale equipment including grain storage, blending, cleaning, conditioning plant, and a modern pneumatic flour mill, with instrumentation and automation, etc.

Note

Two hours lecture.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 150 and GRSC 210, or consent of instructor.

Recommended prerequisites: CHM 230, PHYS 113, MATH 205, and BIOL 255.

Typically Offered

Spring

GRSC 501 - Milling Science I Laboratory

Credits 2

A laboratory course to accompany Milling Science I (GRSC 500). Laboratory exercises in wheat flour milling with full-scale equipment including grain storage, blending, cleaning, conditioning plant, and a modern pneumatic flour mill, with instrumentation and automation.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 500 or concurrent enrollment.

MSM majors have to take GRSC 500 and GRSC 501 concurrently.

Typically Offered

Spring

GRSC 502 - Milling Science II

Credits 2

Advanced study of the entire gradual reduction system of wheat flour milling and the many unit process systems that constitute the milling system. The theory and practice of mill control are studied in detail. Processing of other cereal grains and oil seeds are covered as well as general mill management.

Note

Two one hour lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 210 and GRSC 500 and GRSC 501, or

consent of instructor.

Recommended prerequisite: STAT 225 and PHYS 113 and MATH 205.

Typically Offered

Fall

GRSC 503 - Milling Science II Laboratory

Credits 2

The processes for milling other grains such as corn, oats, sorghum, different classes of wheat, and rye are studied in the laboratory and by practice on small scale milling units. Concepts of material handling properties of grain products and material handling equipment in dry milling operations will be presented. Concepts of statistical process control and spread sheet modeling in the decision making process will be introduced.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 502 or concurrent enrollment or consent of instructor.

Typically Offered

Fall

GRSC 530 - Management Applications in the Grain Processing Industries

Credits 3

This course deals with management principles, leadership concepts and their application to the grain, feed and food industries. This capstone experience uses business scenarios, team projects and knowledge management to expand student's ability to solve problems, impact key business challenges and manage complex issues. Special emphasis is placed on organization dynamics, people management, key business metrics, common operational problems and ethics in business.

Note

Three hours lecture a week

Repeat for Credit

N

Requisites

Prerequisites: Senior standing, GRSC 502 or GRSC 612 or GRSC 637.

Typically Offered

Spring

GRSC 540 - Process Calculations in Food Systems

Credits 3

Application of grain/food industry analytical processing concepts including mass and energy balances, fluid flow, heat transfer, dehydration, evaporation.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 205 or MATH 220. Recommended prerequisite: PHYS 113 or PHYS 115, CHM 210.

Typically Offered

Spring

GRSC 541 - Process Calculations in Food Systems Laboratory

Credits 1

Virtual laboratory experiments supplementing GRSC 540 Process Calculations in Food Systems. Simulations will be used to conduct wide range of virtual experiments representing major food processes.

Note

One-three hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 540 or concurrent enrollment.

Typically Offered

Spring

GRSC 555 - Cereal Food Plant Design

Credits 3

This course deals with principles of modern flour mill design, feasibility and equipment selection for plant improvements and new plant construction. It covers the steps of developing adequate process flow diagrams based on the specific production needs, constraints and preferences. Emphasis is placed on the effects of design on plant operating efficiency, finished product quality, and construction costs.

Note

Three one hour lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and GRSC 500.

Typically Offered

Spring

GRSC 555 - Grain Drying, Storage, Aeration and Pest Management

Credits 3

Introduction to the scientific principles and engineering practices required for the successful management of post-harvest quality grains. This course is only available to distance education students; it is not available to on-campus students.

Note

This course is offered as a distance education course only; it is only available to distance education students.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 310.

Typically Offered

Fall, Spring, Summer

GRSC 556 - Pneumatic Conveying of Dry Solids

Credits 2

The course is designed to introduce students to a comprehensive knowledge of the design, operation and capabilities of pneumatic conveying systems for transportation of dry, powdered and granular materials. The student will study the components of pneumatic conveying systems, the requirements for designing efficient and reliable pneumatic conveying systems, and troubleshooting existing systems.

Note

Two two-hour studio sessions incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing, GRSC 310, GRSC 500 and GRSC 501, PHYS 113 or PHYS 213, MATH 205, or consent of instructor.

Typically Offered

Fall

GRSC 560 - Electricity and Industrial Power Distribution

Credits 3

Major emphasis will be given to application of electricity to machinery for grain processing and electrical code.

Note

Two hours lecture and two hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 500 or GRSC 510 or GRSC 635 or consent of instructor.

Typically Offered

Spring

GRSC 580 - Milling of Specialty Grains

Credits 2

This is a problem-based learning course which aims to increase students' knowledge of flour milling and specialty

grain milling. During the semester students develop critical thinking and problem-solving skills needed to troubleshoot real-life issues related to processing, quality assurance, HSE (Health, Safety, and Environment), and finished product quality. Students are expected to analyze their problems and develop the skills needed to effectively communicate their findings during group presentations.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 502, or consent of instructor.

Typically Offered

Spring

GRSC 590 - Grain Science Problems

Credits 1-3

Study in an area pertinent to grain processing and utilization.

Note

For undergraduate students. Instructor permission.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRSC 591 - Internship in Grain Science

Credits 1

A practical application of feed and food manufacturing technology during an eight-week summer internship with an active commercial feed and food manufacturing company. The course will stress applied aspects of commercial feed and food manufacturing, which can include, but not be limited to, plant operations, maintenance, personnel and labor relations, business management, warehousing, ingredient procurement, quality assurance, and fleet management.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 500, GRSC 510 or GRSC 635.

Typically Offered

Fall

GRSC 592 - Extended Internship in Grain Science

Credits 1

In-depth work-study experiences for up to 6 months on commercial feed and food manufacturing, which can include, but not limited to, plant operations, maintenance, personnel and labor relations, business management, warehousing, ingredient procurement, quality assurance, and fleet management.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 500, 510 or 635.

Typically Offered

Fall, Spring

GRSC 600 - Practicum in Bakery Technology I

Credits 1

Lectures and hands-on laboratory experience with commercial production scale baking equipment for breads and rolls, cookies and crackers, and cakes and sweet doughs.

Repeat for Credit

N

Requisites

Prerequisite: Upper-class bakery science and management majors or permission of the instructor. Recommended Foundation Courses: GRSC 635 and GRSC 636.

Typically Offered

Other

GRSC 601 - Practicum in Bakery Technology II

Credits 1

Lectures and hands-on laboratory experience with commercial production scale baking equipment for breads and rolls, cookies and crackers, and cakes and sweet doughs.

Repeat for Credit

Y

Requisites

Prerequisite: Upper-class bakery science and management majors or permission of the instructor. Recommended Foundation Courses: GRSC 635 and GRSC 636.

Typically Offered

Other

GRSC 602 - Cereal Science**Credits 3**

The characteristics of cereals, legumes, their components and their processing to foods.

Note

Three hours lecture a week.

Online offering of this course is not open to the undergraduate students majoring in BSM, FSM, and MSM

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 265 or CHM 350 and CHM 351.

Typically Offered

Fall, Spring

GRSC 612 - Advanced Feed Technology**Credits 3**

Advanced study of engineering principles applicable to flour and feed plant operations, equipment selection, and processing systems.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 312, PHYS 113 and STAT 225

Typically Offered

Fall

GRSC 615 - Animal Food Safety**Credits 1**

An introduction to the animal food safety regulations in the Food Safety Modernization Act.

Note

One two-hour lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 312.

Typically Offered

Fall

GRSC 620 - Extrusion Processing in the Food and Feed Industries**Credits 4**

The course is designed to provide the student with an understanding of extrusion technology and the ability to apply it to product development and production through a "hands-on" approach. Major emphasis is on laboratory exercises in which students will operate pilot scale extrusion equipment to produce readily-recognizable commercial products such as cheese curls, breakfast cereals, pasta, pet food, etc. Emphasis will also be placed on process and product development, analysis, and problem solving techniques.

Note

Three hours lecture plus one three hour lab a week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: GRSC 602.

Typically Offered

Fall

GRSC 625 - Flour and Dough Testing

Credits 3

The focus of Flour and Dough testing is the analytical tests used to determine attributes of different flours. This course will provide a broad understanding of standard analytical methods and procedures commonly used in flour quality testing. This course will discuss how analyses are done as well as how to evaluate, interpret, and use the results.

Note

Two (2) one-hour lectures and one (1) lab session per week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 602.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

GRSC 635 - Baking Science I

Credits 2

Introduction to chemical and physical properties of flour and other principal ingredients used in production of yeast-leavened bakery foods. Study of major processing methods for making yeasted doughs such as breads, sweet goods, frozen dough, and partially baked goods. Examination of ingredient specifications role of quality control, keeping properties of bread products, and nutritional attributes of various types of breads.

Note

Two hour lecture a week.

Online offering of this course is not open to the undergraduate students majoring in BSM, FSM, and MSM.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 265 or CHM 350 and CHM 351.
Recommended prerequisites: PHYS 113, MATH 205, and BIOL 255.

Typically Offered

Fall

GRSC 636 - Baking Science I Laboratory

Credits 2

A laboratory course to accompany Baking Science I (GRSC 635). Laboratory exercises in theory and production of yeast-leavened baked products.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 635 or concurrent enrollment.

Typically Offered

Fall

GRSC 637 - Baking Science II

Credits 3

Course includes study of physical, chemical, and functional properties of ingredients and processes used in production of bakery products, including cakes, cookies, doughnuts, breads and related products. Shelf-life control and packaging of baked products is also discussed. Total quality programs, specification programs and management of distribution and purchasing systems will also be included in lectures.

Note

Three hours of lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 635.

Typically Offered

Spring

GRSC 638 - Baking Science II Laboratory

Credits 1

A laboratory course to accompany Baking Science II (GRSC 637). Exercises and experiments in production of chemically-leavened and yeast-leavened bakery foods including various cakes, cookies, doughnuts, bagels, icings, and fillings.

Note

Three hours of lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 637 or concurrent enrollment.

Typically Offered

Spring

GRSC 645 - Pet Food Processing**Credits 3**

The course is designed to provide students with an understanding of pet foods, including food products meant for dogs, cats, pet rodents, pet snakes, ornamental fish, exotic and captive wild animals, and the various processing technologies that are deployed for their production. Extrusion, baking, canning, and injection molding technologies will be covered. Other important aspects of pet food production, such as ingredient handling and compounding, quality control, HACCP and sanitation, and packaging will also be discussed.

Repeat for Credit

N

Requisites

Recommended Foundation Course: CHM 230, PHYS 114, ASI 318 or FNDH 132, Junior standing.

Typically Offered

Spring

GRSC 650 - Nutritional Impacts of Processing**Credits 3**

This course explores processing-induced changes in composition and utilization of ingredients and raw

materials for both animal and human foods. Discussion of benefits, limitations, and challenges resulting from processing various ingredients and compound foods, along with alternatives and food additives commonly used in industrial feed and food production to augment, retard, or prevent negative effects.

Note

3 hour lectures per week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 318 or FNDH 132, GRSC 312, junior standing.

Typically Offered

Spring

GRSC 651 - Food and Feed Product Protection**Credits 2**

Sanitation in relation to processing, handling, and storage of human and animal foods. Emphasis on contaminants, control of causative agents, equipment and plant design, applicable laws and regulations.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and BIOL 255.

Typically Offered

Spring

GRSC 655 - Feed Mill plant Design**Credits 2**

This course deals with principles of modern design, feasibility, and equipment selection for new feed mills. Emphasis is placed on the effects of logistics, ingredient availability, operating efficiency, and finished product quality.

Note

Two-hour lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and GRSC 510.

Typically Offered

Spring

GRSC 661 - Qualities of Feed Ingredients

Credits 3

The course provides an integrated overview of the physical, biological, chemical characteristics of common feed ingredients. Quality control and evaluation of ingredients and complete feed is emphasized to ensure the productions of safe feed/safe food.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 312

Typically Offered

Spring

GRSC 670 - Bakery Layout and Management

Credits 2

Provides the practical knowledge and skills necessary to successfully lead and manage a bakery operation. Current problems in the baking industry are discussed to improve production efficiency, performance, capability, profitability, and quality in the context of a bakery operation. This course utilizes team projects to plan and design a bakery with consideration of market demands, product selection, and feasibility.

Note

Two (2) one-hour lectures per week.

Repeat for Credit

N

Requisites

Prerequisite: GRSC 636.

Typically Offered

Spring

GRSC 712 - Vibrational Spectroscopic Analysis and Chemometrics

Credits 1-2

Infrared and particularly modern near-infrared spectroscopic analysis of foods, natural products, and synthetic substances is accomplished with direct sampling and the use of multivariate statistics. This course is intended to enable the student to understand the principles and successfully apply this technology to practical analytical problems with emphasis upon food. Method development will be taught using specific analytes in selected products. Theoretical background, working of modern instrumentation and associated software is presented in support of achieving practical competence.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: BIOCH 265 or CHM 350 and CHM 351 or CHM 371.

Typically Offered

Spring

GRSC 713 - Contemporary Chromatographic Analysis of Food

Credits 1

High performance liquid chromatography (HPLC) is the primary focus of this course. This will be supported by including treatment of topics in contemporary gas chromatography and supercritical fluid chromatography and extraction. Optimizing chromatographic conditions through knowledge of the column chemistry will be covered in addition to detector options, instrumentation, and sample preparation.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: BIOCH 265 or CHM 350 and CHM 351 or CHM 371.

Typically Offered

Spring

GRSC 740 - Biomaterials Processing**Credits 3**

This course is designed for students who are interested in plant biomaterials processing. This course will teach technologies of biobased materials processing including starch extraction (wet milling), plant oil extraction and refining, plant protein extraction and processing, cellulose processing, biofuel production, chemicals bioconversion, and drying technologies of biomaterials.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BAE 545 or GRSC 602.

Typically Offered

Fall-Even Years

Crosslisted

BAE 740

GRSC 745 - Fundamentals of Bioprocessing**Credits 3**

This course is designed for students who desire a clear understanding of bioprocessing principles as applied to the emerging bio-based industry. This course covers the fundamentals of mass and energy balances, fluid dynamics, heat and mass transfer, as applied to bioprocessing. The microbial growth, kinetics and fermenter operation will be covered in detail. Fundamentals of downstream operation as applicable to bioprocessing will be covered in this course. Industrial bioprocessing case studies that involve the integration of the course contents will be discussed.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: MATH 205 or MATH

220, PHYS 113 or PHYS 115, and BIOCH 265 or CHM 350 and CHM 351 or CHM 210.

Typically Offered

Spring

GRSC 750 - Pet Food Formulation for Commercial Production**Credits 1**

Students completing this course will become proficient at formulating pet foods and have a working knowledge of ingredients, processes, and the software necessary to create new products, revise existing formulas, and perform business and production analyses.

Note

The course will be offered as a January intersession short-course on-site at the IGP-Institute.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: GRSC 645, ASI 320, ASI 677.

Typically Offered

Intersession

GRSC 790 - Grain Science Problem**Credits 1-18**

Graduate study in an area pertinent to grain processing and utilization.

Note

For graduate students. Consent of department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRSC 810 - Particle Technology for Solids Handling and Processing**Credits 3**

Overview of particle technology with an emphasis on practical applications in milling and grain based operations. Conveying, storage, size reduction and separation are the important unit operations of grain processing industries that involve particle sizes ranging from a fraction of a micron to a few millimeters. Subjects include size and shape characterization, size distribution and measurement, characteristic dimensions, density, and their theories governing the behavior of the particles under different conditions.

Note

Two hours lecture and three hours lab each week.

Repeat for Credit

N

Typically Offered

Spring

GRSC 815 - Fundamentals of Processing Grains for Food

Credits 3

Unit processes in the receiving and storing of grains; grinding, sifting, mixing, separation, conveying, cooling, drying, etc. This course is not open to undergraduate majors in the department.

Note

Two hours lecture and three hours laboratory a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: PHYS 213 or equivalent.

Typically Offered

Fall-Odd Years

GRSC 820 - Advanced Extrusion Processing

Credits 4

Advanced study of the engineering principles of extrusion forming and cooking with a detailed focus on scale-up. A variety of extrusion systems will be studied in lab with associated group projects.

Note

Three hours lecture and three hrs. laboratory a week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: GRSC 620 or previous extrusion experience.

Typically Offered

Fall-Odd Years

GRSC 825 - Novel Uses of Biopolymers

Credits 2

Teach existing value-added technology of cereal polymers, and explore new processes and utilization in non-traditional food/feed and in non-food/feed.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: BIOCH 521 and PHYS 115.

Typically Offered

Fall

GRSC 830 - Physical Properties of Cereal Polymers

Credits 3

Physical properties of cereal polymers include physical attributes, rheological, mechanical, thermal, electrical, and optical properties. Thermal analysis methods will be taught. Thermal analyses include glass transition, gelatinization, denaturation, and thermal softening and settings of cereal polymers. Rheological properties associated with these thermal transitions will be discussed. Applications of thermal analysis in cereal chemistry, processing, and product quality control will be discussed.

Note

Two hours lecture and discussion, and two hour lab.

Repeat for Credit

N

Requisites

Recommended Foundation Course: GRSC 602.

Typically Offered

Other

GRSC 840 - Advanced Grain Processing Technology**Credits 3**

An overview of unit operations used in the grain/food processing industry will be given. Specific applications of the unit operations will be covered in detail for dry and wet milling (wheat/corn/sorghum), masa manufacturing, oilseed processing, rice milling, and packaging systems. A term project, which will include an applied research component will be developed by each student.

Note

Three hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Student Standing.

Typically Offered

Spring

GRSC 850 - Grain Protein Chemistry & Technology**Credits 3**

This graduate course will address the structure, chemistry, properties, and applications of proteins. The primary focus will be on plant food proteins (cereals, pulses, and oilseeds). Animal (milk, egg, meat) and microorganism-derived (mycoproteins, algae) proteins will also be moderately covered to provide students with a comprehensive understanding of the subject.

Note

Three-hour lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: CHM 531, 532, and

BIOCH 521 or equivalent.

Typically Offered

Fall-Odd Years

GRSC 891 - Study Abroad Experience in Grain Science**Credits 0-3**

Travel seminar course designed to prepare graduate students before their international study abroad experience and analyze, critique, and report about their faculty-led study tours or short courses. The academic topics will vary with each international activity.

Note

Consent of course instructor.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

GRSC 899 - Research in Grain Science**Credits 1-18**

Basis for the M.S. Thesis.

Note

Consent of staff.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRSC 900 - Professional Development in Grain Science**Credits 1**

A team-taught course that provides students with skills and practices needed to succeed in graduate school and future academic or professional careers.

Note

One hour lecture a week. Required of all newly enrolled graduate students in grain science during their first year.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall

GRSC 901 - Starch Chemistry and Technology**Credits 3**

Chemical and physical properties of cereal and legume starches. Isolation, structure, assay methods, and properties. Methods of modifying starches for industrial use, including chemical, physical, and enzymic modification.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: BIOCH 521, GRSC 602, PhD students, or consent of instructor.

Typically Offered

Other

GRSC 902 - Carbohydrates in Food**Credits 3**

Structure and properties of food carbohydrates, including sugars, oligosaccharides, and polysaccharides, and methods of their modification and analysis.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: CHM 350 or BIOCH 521, PhD students, or consent of instructor.

Typically Offered

Spring-Odd Years

GRSC 905 - Enzyme and Bioprocessing Applications**Credits 3**

The course explores the applications of enzymes and microbial cultures in the bioprocessing industry, including food, feed, industrial chemicals and biofuels; and major microbial pathways for product synthesis including a clear understanding of enzyme and microbial kinetics at an advanced level.

Note

Three one hour lectures per week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: GRSC 820 or GRSC 740/BAE 740 or BIOCH 755.

Typically Offered

Fall

GRSC 910 - Topics in Grain Science**Credits 1-18**

Discussions and lectures on important areas and contributions in the field of grain science not currently covered in present courses.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GRSC 915 - Advanced Cereal Chemistry**Credits 3**

The chemistry of cereal components at the molecular level. The role and interactions of the various constituents, their functionality in producing an end product, and their influence on nutritional properties.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: BIOCH 521 and BIOCH 522.

Typically Offered

Fall

GRSC 920 - Grain Science Graduate Seminar**Credits 1**

Weekly evaluation of the scientific literature and the reasoning underlying the selection of research problems, the formulation and testing of hypotheses, and the evaluation and presentation of results. Discussion of research and technical problems in the discipline.

Note

One-hour lecture per week.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing or consent of instructor

Typically Offered

Fall, Spring

GRSC 999 - Research in Grain Science**Credits 1-18**

Basis for Ph.D. Dissertation.

Note

Consent of staff.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GWSS 105 - Introduction to Gender, Women, and Sexuality Studies**Credits 3**

An interdisciplinary analysis of personal experiences and social and political institutions as they shape and are shaped by the intersections of gender, race, class, sex,

sexuality, ethnicity, nation, citizenship, and ability on local, national, and global levels. Topics include the roles of biology and social construction in shaping gender and sexuality, sources of structural inequities; and feminist, queer, trans, anti-racist, and anti-colonial activisms.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

GWSS 220 - Climate Justice Movements**Credits 3**

Explores climate justice movements and concepts in the US and globally. Particular attention is placed on the ways that gender, race, class, and global location intersect and how different social actors (individuals, activist groups, governments, nations) define climate change and how climate justice activist movements fight for change. Through discussion and critical analysis, will explore a variety of topics and concepts including global climate change, environmental and climate justice, growth and degrowth, colonization and decolonization, and human and nature rights among others. By examining these, we can come to understand how climate justice is a political position, series of movements, and hope for the future.

Repeat for Credit

N

Typically Offered

Fall-Even Years

GWSS 230 - Intersectionality and Health Justice**Credits 3**

Examines intersections of gender, race, class, Indigeneity, nation, and sexuality in critiques, activisms, and histories of medicine, public health, and health sciences. Joins thinking in racial, environmental, disability, and reproductive justices with queer and trans studies in exploring questions and ethics of healthcare.

Repeat for Credit

N

Typically Offered

Spring-Odd Years

GWSS 240 - Activism and Social Justice**Credits 3**

Examines ethical dilemmas surrounding activism, what constitutes social justice, and civil rights justice processes. Centers Indigenous Studies, Queer Studies, Feminist Studies, American Studies, and Social Transformation Studies perspectives on ethics, activism, and justice.

Repeat for Credit

N

Typically Offered

Spring-Even Years

GWSS 275 - Gender, Race, and Sex in Science Fiction**Credits 3**

Explores the ways that gender, sex, sexuality, race, and class intersect in science fiction, including Afrofuturism, Asian futurism, Chicanafuturism, and Indigenous futurism. Examines how the ways that we imagine the future and the alien offer insight into contemporary concerns about gender, sexuality, race and racism, colonialism, imperialism, and justice.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

GWSS 300 - Selected Studies of Gender, Women, and Sexuality Studies**Credits 3**

Specific course content will vary by semester and instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

GWSS 305 - Engaging Gender, Women, and Sexuality Studies**Credits 3**

An examination of the origins and current status of the Gender, Women, and Sexuality Studies field, provides core concepts and research methodologies.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

GWSS 325 - Queer Studies: Concepts, History, and Politics**Credits 3**

Examines the origins of Queer Studies and introduces core concepts, foundational histories, and critical frameworks that will prepare students for further study.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

GWSS 335 - Transgender Studies

Credits 3

Explores the history of and current debates in the field of transgender studies. Examines the roles of race, class, nation, colonialism, and (dis)ability in understanding transgender identities and politics.

Repeat for Credit
N

Typically Offered
Intersession

K-State 8
Social Sciences

GWSS 350 - Gender in American Film**Credits 3**

This course examines depictions of gender, race/ethnicity, class, and sexuality in American film. It focuses on the way in which images in mainstream Hollywood films reinforce, normalize and/or question power, power relations, and stereotypes.

Note
This is a lecture and recitation course.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Human Diversity within the U.S.

GWSS 365 - Reproductive Rights and Wrongs**Credits 3**

Explores contemporary reproductive politics within the historical context of struggles for reproductive justice in the U.S.

Repeat for Credit
N

Typically Offered

Fall, Spring

K-State 8
Human Diversity within the U.S.
K-State 8 Tag 2
Historical Perspectives

GWSS 375 - Disability Justice and Gender**Credits 3**

Introduces a disability justice framework and explores how ableism, as a social system, intersects with other systems of inequality. Examines disability from intersectional perspectives that center feminist, queer, and trans analyses of disability, particularly those of U.S. people of color. Explores how disability has been constructed, regulated, and disciplined by structures and institutions as well as met with resistance by individuals and social movements.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Human Diversity within the U.S.
K-State 8 Tag 2
Ethical Reasoning and Responsibility

GWSS 380 - Global Struggles for Feminist, Queer, and Trans Justice**Credits 3**

Explores how justice struggles are connected. Examines how colonialism and transnational globalization intersect with gender, sexuality, class, and nation, as well as the effects of colonization, migration, democratization, and capitalist and socialist development strategies on women and queer people in "Third," "Second," "First," and Native Nations.

Repeat for Credit
N

Typically Offered
Other

K-State 8
Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

GWSS 405 - Resistance and Movements for Social Change**Credits 3**

Examines Women's Resistance and movements against gender violence and discrimination in the context of colonialism, globalization, war, militarism, and occupation.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

GWSS 410 - Feminist Thought**Credits 3**

Survey of a variety of feminist analyses of society, culture, and work, as well as visions for social change. The historical development of key feminist theories, contemporary debates, and multicultural and global feminism will be analyzed.

Repeat for Credit

N

Requisites

Prerequisite: GWSS 105 or GWSS 305.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

GWSS 435 - Race/Sex/Science**Credits 3**

Examines the ways that race, gender, sex, sexuality, nation, ability, colonialism, and class shape and are shaped by

science and technology. Focus is on U.S.,

Repeat for Credit

N

Typically Offered

Intersession

K-State 8

Social Sciences

GWSS 450 - The Stories of a Young Girl**Credits 3**

An interdisciplinary examination of female adolescence, focusing in particular on the way it is depicted in literature.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

GWSS 460 - Coming Out and Sexual Identity**Credits 3**

Examines how narratives of coming out and the organization of National Coming Out Day impact personal freedom, policies and attitudes toward sexual orientation.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

GWSS 480 - Seminar in Gender, Environment and Justice**Credits 3**

Examines the philosophical, historical, and material aspects of the human/nature relationships and the intersection of

gender, race/ethnicity, class and global location with environment and environmental justice.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

GWSS 499 - Honors Project

Credits 3

Honors Project

Note

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

GWSS 500 - Topics in Gender, Women, and Sexuality Studies

Credits 1-3

Topics vary.

Repeat for Credit

Y

Typically Offered

Fall, Spring

GWSS 505 - Independent Study in Gender, Women, and Sexuality Studies

Credits 1-3

Independent, supervised study in a topic related to Queer

Studies or Gender, Women, and Sexuality Studies.

Repeat for Credit

Y

Requisites

Prerequisite: GWSS 105 or GWSS 305.

Typically Offered

Fall, Spring

GWSS 510 - Research Methods in Gender, Women, and Sexuality Studies

Credits 3

An advanced course in practices of research in Gender, Women, and Sexuality Studies, with attention to what distinguishes interdisciplinary, feminist research from traditional, disciplinary practices. Methods explored may include survey, interview, oral history, ethnography, hermeneutics, content analysis, case study, experimental, and action research.

Repeat for Credit

N

Requisites

Prerequisite: GWSS 410.

Typically Offered

Spring

GWSS 550 - Gender and Popular Culture

Credits 3

Using an intersectional lens, this course explores gender, race, class, global location, and sexuality in the production, portrayals, and consumption of popular culture. The popular culture forms explored in this course may include fiction, film, television, music, magazines, advertising, and/or material culture.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Social Sciences

GWSS 560 - Intersections of Violence and Resistance**Credits 3**

An examination of violence, and anti-violence justice organizing as the product of race, capitalism, gender, sexuality, nation, empire, and settler colonialism. Centers violence against women, gender violence, and the violence of the normative.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

GWSS 570 - Gender and Food Justice**Credits 3**

Uses the feminist concept of intersectionality to explore the ways that gender intersects with race, class, and global location in food justice and food sovereignty movements. Focusing on works by and about U.S. people of color, students will explore a variety of topics and concepts including systemic bias in food deserts and local food, decolonizing food, hunger and malnutrition, and human rights. Examination of these narratives enables students to understand how food and food systems are both a means of dominant control and powerful sites of gender resistance.

Repeat for Credit

N

Typically Offered

Fall

GWSS 605 - Social Change Field-Experience**Credits 3**

Applied and interdisciplinary exploration of social change in community, national, and international groups and organizations. Includes field experience, professional-

related training.

Repeat for Credit

N

Requisites

Prerequisite: Permission of the instructor, and junior standing.

Typically Offered

On sufficient demand

GWSS 610 - Capstone Seminar in Gender, Women, and Sexuality Studies**Credits 3**

An advanced seminar for in-depth investigation of a specific topic. Students will conduct independent research and produce a substantial project or paper.

Repeat for Credit

Y

Requisites

Prerequisite: GWSS 510.

Typically Offered

Fall

GWSS 700 - Advanced Topics in Gender, Women, and Sexuality Studies**Credits 1-3**

Provides an in-depth theoretical and empirical analysis of scholarly works relating to an interdisciplinary topic in Gender, Women, and Sexuality Studies.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing or above and instructor permission.

Typically Offered

Other

GWSS 784 - Internship in Gender, Women, and Sexuality Studies

Credits 1-12

Supervised field work at the local, state, national, or international level in a community, volunteer, activist, or political organization.

Note

A maximum of 3 credits can count toward the Women's Studies minor, and a maximum of 6 towards the major.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor and two courses in Gender, Women, and Sexuality Studies.

Typically Offered

Fall, Spring, Summer

GWSS 799 - Independent Study for Graduate Students or Advanced Undergraduate Students**Credits 1-3**

Topics Vary. Independent study in problems, issues, topics in Gender, Women, and Sexuality Studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

GWSS 810 - Key Concepts in Gender, Women, and Sexuality Studies**Credits 3**

Introduction to core theoretical concepts, research methods, and methodologies in Gender, Women, and Sexuality Studies. Provides feminist, queer, trans, women's, and race and ethnic studies foundations and frameworks for graduate level inquiry.

Note

Required for Graduate Certificate in Gender, Women, and Sexuality Studies.

Repeat for Credit

N

Typically Offered

Spring

HDFS 102 - Careers in Human Development & Family Science**Credits 1**

Focuses on career development and related activities for Human Development & Family Science majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

HDFS 110 - Introduction to Human Development**Credits 3**

A study of physical, social, and psychological human development and growth across the life course with an emphasis on relationships with family, peers, and others.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

HDFS 201 - Introduction to Philanthropy**Credits 3**

Examines the history, principles, and practice of philanthropy, with a particular focus on relationship building and the desire to promote the well-being of others by working to prevent or resolve social issues.

Repeat for Credit

N

Typically Offered

Fall-Even Years

HDFS 250 - Interpersonal and Family Relationships

Credits 3

Study of diverse family and close interpersonal relationships including romantic, parent-child, sibling, and other close relationships, with an emphasis on how individuals, families, and society influence relationships.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 or PSYCH 110 or SOCIO 211.

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

HDFS 300 - Problems in Human Development and Family Science

Credits 1-18

Independent or small group study.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 301 - Interpersonal Skills for Helping Professionals

Credits 3

Study of personal qualities necessary for working with and recognizing needs of diverse individuals and families with an emphasis on interpersonal skills needed as helping professionals.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 or PSYCH 110.

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

HDFS 302 - Introduction to Human Sexuality

Credits 3

Study of sexual development relationships across the life course.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

HDFS 303 - Developing Intimate Relationships

Credits 3

This course will explore topics related to intimate relationships, which include attraction, communication, casual encounters, cohabitation and conflict. Students will critically evaluate current theory and research concerning the elements of healthy relationships. This course will include a didactic and experiential opportunities for the development of a body of knowledge concerning committed relationships, the development of interpersonal skills, increasing personal awareness, and establishing appropriate expectations.

Repeat for Credit

N

Typically Offered

Intersession

HDFS 305 - Family Violence Across the Life Course

Credits 3

Study of violence within families (e.g., child abuse, dating violence, intimate partner violence, elder abuse), prevalence rates, risk and protective factors, and outcomes with an emphasis on prevention and intervention.

Repeat for Credit

N

Typically Offered

Other

HDFS 307 - Introduction to Marriage and Family Therapy

Credits 3

This course is designed as an introduction to the theory and practice of MFT. It includes a study of the philosophical, conceptual, and theoretical background of family therapy. The course will review theoretical formulations, common family problems, and effective treatment strategies. Readings and class discussions will provide students with practical examples of the concepts and offer opportunities for students to examine their own family dynamics.

Repeat for Credit

N

Typically Offered

Other

HDFS 322 - Transition to Parenthood

Credits 3

This course is an empirically based evaluation of the transition to parenthood from the onset of pregnancy to three years after the child's birth.

Repeat for Credit

N

Typically Offered

Intersession

K-State 8

Social Sciences

HDFS 375 - Introduction to Research Methods in Human Development and Family Science

Credits 3

Study of research methods in the field of human development and family science with an emphasis on the intersection of research methods, theory, and practice. Students will develop an understanding of the research process and skills necessary to be a critical consumer of research.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 and HDFS 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

HDFS 411 - HDFS Practicum

Credits 0-3

Independent Study.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 460 - Families and Social Policy

Credits 3

Study of the impact of policies on families and the roles of HDFS professionals in advocacy and education regarding policies and policy change related to individual and family well-being.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

HDFS 475 - Introduction to Child Life**Credits 3**

Introduction to the field of child life practices in direct and non-direct services in pediatric healthcare. Focus on the impact of illness, injury and healthcare on children and their families through the context of development theory and psychosocial treatment issues that affect the healthcare experience.

Note

Meets the required standards of the Child Life Council.

Repeat for Credit

N

Typically Offered

Spring

HDFS 500 - Special Problems in Human Development & Family Services**Credits 0-6**

Independent or small group study on special topics in human development and family services.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 501 - Philanthropy in Context**Credits 3**

Examines philanthropy in the context of diverse individuals and organizations, and considers the unique contributions of diversity in the areas of donor motivation, identification of funding sources, and approaches to philanthropic efforts that might be culturally or contextually influenced. Ethical considerations relevant to the field will also be explored.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 201

Typically Offered

Spring-Even Years

HDFS 506 - Adolescent and Emerging Adult Development**Credits 3**

Study of development during adolescence and emerging adulthood with an emphasis on individual, family, societal, and contextual factors.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 or PSYCH 110.

Typically Offered

Fall, Spring, Summer

HDFS 510 - Midlife to Late Adult Development**Credits 3**

Study of adult development with an emphasis on individual, family, societal, and contextual factors.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 or PSYCH 280.

Typically Offered

Fall, Spring, Summer

HDFS 525 - Community Mental and Relationship Health**Credits 3**

Undergraduate students will explore theoretical models and research on how social scientists, educators, and practitioners can collaborate with communities to improve mental health and relationship well-being. Teams will apply strategies by partnering with community organizations to develop a brief mental health and relationship well-being community program and walk away with materials applicable to community change in diverse

future professions.

Repeat for Credit

N

Typically Offered

Spring-Even Years

HDFS 550 - Application of Theories in HDFS

Credits 3

Study, survey, and critique of prominent human development and family theories with an emphasis on using theory to work with individuals and families in professional settings.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

HDFS 552 - Social Justice in a Family Context

Credits 3

Study of how individuals and families experience inequality, power, and privilege related to race, ethnicity, national origin, gender, social class, religion, sexual orientation, socioeconomic status, geographic location, ability, and other social positions.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

HDFS 570 - Program Development and Implementation

Credits 3

Study of translating research-based knowledge into educational materials and programs for individuals and families, with an emphasis on prevention programs.

Repeat for Credit

N

Requisites

Prerequisites: HDFS 110 and HDFS 250

Typically Offered

Fall, Spring

HDFS 575 - Research Practicum

Credits 0-3

Independent or small group study. Provides students with a high impact experiential research opportunity with faculty.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 579 - Orientation to Human Development and Family Science Internship

Credits 1

Consideration and application of professional knowledge and skills necessary for selection and placement in a social agency for a supervised experience in direct service to clients.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing; and minimum GPA of 2.50; HDFS majors only.

Typically Offered

Fall, Spring, Summer

HDFS 580 - Human Development Family Science Internship

Credits 1-9

An internship experience at a student-selected agency or organization.

Repeat for Credit
Y

Requisites

Prerequisite: HDFS 579 with grades of B or better; senior standing; and minimum GPA of 2.50; HDFS majors only.

Typically Offered
Fall, Spring, Summer

HDFS 585 - Professional Seminar in Human Development and Family Science

Credits 3

Seminar course for students completing the HDFS Internship. Consideration of professional roles and responsibilities of family science professionals, ethical decision-making, and career development. Focus on skills required in the delivery of human services with diverse groups.

Repeat for Credit
N

Requisites

Prerequisite: HDFS 579, Senior standing, and HDFS majors only. Corequisite: HDFS 580.

Typically Offered
Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

HDFS 590 - Professional Capstone in Human Development and Family Science

Credits 2

This course focuses on the development of career and professionals skills relevant to human development and family science professionals.

Repeat for Credit
N

Requisites

Prerequisite: Senior standing and HDFS majors only.

Typically Offered
Fall, Spring, Summer

HDFS 654 - Death and the Family

Credits 2-3

Exploration of contemporary attitudes toward death and dying; related influences on individual development and family life.

Repeat for Credit
N

Requisites

Prerequisite: HDFS 550 or SOCIO 640.

Typically Offered
Other

HDFS 660 - Marriage Preparation and Enrichment

Credits 3

History, processes, components, goals, and research support base for contemporary marriage preparation and enrichment programs.

Repeat for Credit
N

Requisites

Prerequisite: HDFS 250 and HDFS 550.

Typically Offered
Intersession

K-State 8

Social Sciences

HDFS 670 - Working with Parents

Credits 3

Approaches to parenting and parent education with

emphasis on programmatic implications of life-span developmental principles within a family context.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 110 and HDFS 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

HDFS 700 - Problems in Human Development and Family Science

Credits 1-6

Independent study on aspects of human development and family studies.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 708 - Topics in Human Development and Family Science

Credits 2-3

Review of recent research and theory related to exploration of methods and family and interpersonal processes.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 711 - Foundations of Youth Development

Credits 1

This course examines the fundamentals of youth development and the youth development profession. Through this introduction to the field, students will explore the ethical, professional and historical elements of youth development as it has evolved toward professionalization.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 712 - Community Youth Development

Credits 3

Community Youth Development focuses upon the national emphasis of a strength-based or asset approach to community youth development. Emphasis is placed upon research, theory, and practice applied in communities throughout the U.S. Students will explore existing models, theoretical and applied literature and current community efforts as a basis for understanding community youth development.

Repeat for Credit

N

Typically Offered

Fall

HDFS 713 - Adolescents and Their Families: Implications for Youth Professionals

Credits 3

This course covers adolescent development as it is related to and intertwined with family development. The reciprocal influences between adolescents and their families will be examined. Working with youth in relation to the family system will be highlighted.

Repeat for Credit

N

Typically Offered

Spring

HDFS 714 - Program Design, Evaluation, and Implementation

Credits 3

Overview of the program development process and outcome evaluation of community, children, and family programs. Mode of outcome scholarship and their implications for community-based programs are discussed. Participation in community-based projects involving the practical application of program design and evaluation methods.

Repeat for Credit

N

Typically Offered

Spring

HDFS 715 - Youth Issues and Life Skills**Credits 2**

This course will present three strands: issues faced by youth today and associated risk and resiliency factors; life skills for youth; and helping skills necessary for youth professionals who work with young people.

Repeat for Credit

N

Typically Offered

Summer

HDFS 716 - Topics in Contemporary Youth Issues**Credits 1-3**

This course will present issues faced by youth today and associated risk and resiliency factors.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 717 - Youth Policy**Credits 3**

Examines various federal and state policies designed specifically for youth including (a) defining and identifying current youth policies; (b) examining policies designed to "protect the well-being" of youth (e.g., zero tolerance,

restorative justice, juvenile justice and reform); and (c) examining targeted youth policies (e.g., foster care, policies for youth with disabilities, homeless youth).

Repeat for Credit

N

Typically Offered

Fall

HDFS 718 - Youth Professionals as Consumers of Research**Credits 3**

Designed to help youth development professionals understand and apply research results and theories to practice. Emphasis placed on research and theory reports related to the youth development with particular attention to research procedures and outcomes.

Repeat for Credit

N

Typically Offered

Spring

HDFS 719 - Program Administration and Management**Credits 3**

Designed to introduce students to the development, administration and management of youth, family, and community service organizations.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 720 - Youth Development**Credits 3**

Designed to introduce students to the developmental period of adolescence including theory and research on positive youth development. Through a critical examination of the professional literature, students will recognize and become familiar with the major issues and transitions adolescents face as they successfully navigate this developmental stage.

Repeat for Credit

N

Typically Offered

Summer

HDFS 722 - Youth and Cultural Contexts**Credits 3**

Examine the cultural heritage of differing family structures, types, and social and educational processes experienced by youth in these families. Students will critically examine how ethnic groups fit historically into our society, and the results of how history has shaped our present day situation.

Repeat for Credit

N

Typically Offered

Fall

HDFS 723 - Practicum in Youth Development**Credits 1-3**

Supervised experience in youth development practice and service provision in organizational setting.

Note

Practicum and on-site supervisor consent required.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 724 - Working with Military Families**Credits 3**

Initial information necessary to prepare a service-provider for work with military families. Introduction to the culture, context, and complexities of the contemporary military family. This course equips learners to work in capacities which support military families through times of challenge, helping them foster resilience as they cope with military life.

Repeat for Credit

N

Typically Offered

Summer

HDFS 725 - Community Mental and Relationship Health Interventions**Credits 3**

Graduate students will explore theoretical models and research on how social scientists, educators, and practitioners can collaborate with communities to improve mental health and relationship well-being. Students will have the opportunity to lead teams that will apply strategies by partnering with community organizations to develop a brief mental health and relationship well-being community program and develop materials applicable to community change in diverse future professions.

Repeat for Credit

N

Typically Offered

Spring-Even Years

HDFS 752 - Social Justice Approach to Prevention in HDFS**Credits 3**

Study of how individuals and families experience inequality, power, and privilege related to race, ethnicity, national origin, gender, social class, religion, sexual orientation, socioeconomic status, geographic location, ability, and other social positions, with an emphasis on social justice approach to prevention.

Repeat for Credit

N

Requisites

Students who have taken HDFS 552 may not take HDFS 752 for credit.

Typically Offered

Fall, Spring

HDFS 770 - Development and Implementation of Prevention Science Programs**Credits 3**

Study of translating research-based knowledge into educational materials and programs for individuals and families, with an emphasis on prevention programs in human development and family science settings.

Repeat for Credit

Y

Requisites

Recommended Prerequisite: HDFS 850

Typically Offered

Fall

HDFS 784 - Foundations and Principles of Family and Community Services

Credits 3

An introduction to the field of family studies and related professions that involve working with individuals and families in communities.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 785 - Family Dynamics

Credits 3

An examination of theories of family function and dysfunction, techniques of assessment, and models of family interventions.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 786 - Lifespan Development

Credits 3

Human development from both lifespan and bio-ecological perspectives focusing on major theories of development and current research on the micro-macro relationship.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 787 - Resilience in Families

Credits 3

Exploration of resilience approaches to the study of families and human development across the life cycle.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 791 - Parenting Education

Credits 3

An examination of theories, models, methods, research, and skills related to parenting and parent education.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HDFS 801 - Grant Development and Management

Credits 3

Introduces students to the grant development process and provides an overview of what happens after a grant is awarded. Topics include: identifying funding sources, generating fundable ideas, assessing needs, project planning, budget design, evaluation and project management.

Repeat for Credit

N

Typically Offered

Summer

HDFS 806 - Statistical Methods in Human Development and Family Science I

Credits 3

Introductory course in the use of statistics in family and human services research. Examines the use of statistical methods from basic descriptive and univariate measures to multivariate measures including ANOVA and Multiple Regression Analyses as they are used in family and human services research. Emphasis is placed on the analytical and applied aspects of the statistical procedures.

Repeat for Credit

N

Typically Offered

Fall

HDFS 808 - Topics in Applied Family Science**Credits 1**

Recent research focusing on selected relevant topics.

Repeat for Credit

Y

Typically Offered

Fall, Spring

HDFS 809 - Qualitative Research Methods in Human Development and Family Science**Credits 3**

Expands students' skills in theories and methods associated with qualitative research. Emphasis on understanding foundations of qualitative methods, comparing and using various qualitative traditions and applying this knowledge to a research project.

Repeat for Credit

N

Typically Offered

Fall

HDFS 825 - Family Resource Management**Credits 3**

Survey course of personal finance and family resource management literature to provide an overview of how individuals and family members develop and exercise their capacity to obtain and manage resources to meet life needs.

Resources include the self, other people, time, money, energy, material assets, space, and environment.

Repeat for Credit

N

Typically Offered

Summer

HDFS 850 - Family Science**Credits 3**

Survey of family research literature to illustrate various approaches to the study of the family and to understand family changes within the life cycle.

Repeat for Credit

Y

Typically Offered

Fall

HDFS 852 - Theories of Human Development and Family Science**Credits 3**

Examines theories of human development and families, with emphasis on the application of human development and family theory in prevention science.

Repeat for Credit

Y

Typically Offered

Fall

HDFS 860 - Family Policy**Credits 3**

Examines the development, formation, implementation, and application of policy issues related to the family issues and social problems. Emphasis placed on how policy is made and how professionals can influence policy issues and outcomes.

Repeat for Credit

Y

Typically Offered

Other

HDFS 862 - Interpersonal Relationships

Credits 3

In-depth examination of interpersonal relationships, including theoretical perspectives, research methods, relationship forms, relationship processes, and how context affects relationships.

Repeat for Credit

Y

Typically Offered

Fall

HDFS 881 - Capstone in Human Development and Family Science

Credits 1-6

Supervised experience in providing help and/or instruction in the several areas of human development and family studies presented in terms of the special interests of the students. Consent of practicum supervisor is required for each.

Repeat for Credit

Y

Requisites

Prerequisite: HDFS 719 or HDFS 770.

Typically Offered

Fall, Spring, Summer

HDFS 882 - Practicum in Study of Student Development

Credits 1-6

Supervised experience in providing help and/or instruction in the several areas of human development and family studies presented in terms of the special interests of the students. Consent of practicum supervisor is required for each.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 888 - Research Methods in Human Development and Family Science

Credits 3

Focuses on the study and application of research methodology in the field of Human Development and Family Science.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 225 or STAT 702.

Typically Offered

Fall

HDFS 890 - Application of Research & Statistics in Human Development and Family Science

Credits 3

Development of students' skills as quantitative methodologists and scholars. Students will refine their thinking about their research program and explore data sets that complement their research interests. Application, for purposes of this course, involves the utilization of statistical knowledge and techniques in practice, and the ability to convey this information to others, both through academic writing and through hands-on instruction.

Note

Familiarity with the basic functions of SPSS and AMOS are recommended.

Repeat for Credit

Y

Requisites

Prerequisite: FSHS 888 and any upper division or graduate level statistics courses.

Typically Offered

Spring

HDFS 893 - Evaluation of Prevention Science Programs

Credits 3

Study and application of program evaluation approaches and methodology pertinent to evaluating prevention science programs in human development and family science settings.

Repeat for Credit

Y

Requisites

Prerequisite: HHS 888 or another graduate level social sciences research course.

Typically Offered

Spring

HDFS 894 - Readings in Human Development and Family Science

Credits 1-6

Implications of research findings in preparation for professional work in counseling, teaching, and research in human development and family science.

Repeat for Credit

Y

Requisites

Prerequisite: 12 hours in social-behavioral science and consent of instructor.

Typically Offered

Fall, Spring, Summer

HDFS 898 - Professional and Ethical Issues in Applied Family Science

Credits 1

Emphasizes the research-theory-practice connection. Includes cutting-edge issues in the field, ethics and professional development.

Repeat for Credit

Y

Typically Offered

Spring

HDFS 899 - MS Research in Human Development and Family Science

Credits 1-8

Individual research problems which may form the basis for the master's thesis or report.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HDFS 906 - Statistical Methods in Family Studies and Human Sciences II

Credits 3

Advanced applied statistics course designed for graduate students with a foundation and understanding of basic and multivariate statistics. Examines multiple variable analyses including log-linear, discriminate analyses, OLS and logistic regression and the issues involved using these techniques; principal component and factor analyses; path analyses; structural equation modeling; hierarchical linear and nonlinear modeling; and growth curve modeling.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 806

Typically Offered

Fall

HDFS 909 - Advanced Qualitative Methods in Family Science

Credits 3

Emphasizes the diversity and variety within qualitative methodology. Focuses on hands-on experiences of completing a qualitative research project after the basic research design has been determined.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 809 OR EDLEA 838

Typically Offered
Spring

HDFS 950 - Theory Construction in Human Development and Family Science

Credits 3

Focuses on the philosophical underpinnings, history, and practice of theory construction in the field of Human Development and Family Science. Includes examination of strategies and approaches to developing theories about individuals and families and the relationships of theory development to research methodology and practice.

Repeat for Credit
Y

Requisites
Prerequisite: HDFS 852

Typically Offered
Spring-Odd Years

HDFS 979 - Advanced Professional Issues in Family Science

Credits 3

Capstone course for PhD students. Examines expectations and responsibilities of working in academia or other PhD-level professional positions: submitting and reviewing scholarly publications and presentations, serving as an expert witness, professional ethics, etc.

Repeat for Credit
Y

Requisites
Prerequisite: Completed at least 24 graduate credits.

Typically Offered
Other

HDFS 981 - Applied Practicum in HDFS

Credits 1-3

This course is designed to provide students in the Prevention Science in HDFS doctoral program with a supervised experience in the field. The practicum experience helps students synthesize and apply their

coursework while learning more about being a highly skilled professional in the field.

Repeat for Credit
Y

Requisites
Recommended Prerequisite: HDFS 770 and consent of instructor.

Typically Offered
Fall, Spring, Summer

HDFS 982 - College Teaching Practicum in HDFS

Credits 1-3

This course is designed for students in the Prevention Science in HDFS doctoral program to gain practical skills in teaching through a structured teaching experience. This will involve observing; developing activities, lectures, assignments, and exams; teaching part of the assigned course; evaluating student performance; as well as other relevant teaching experiences.

Repeat for Credit
Y

Requisites
Prerequisite: EDCI 943

Typically Offered
Fall, Spring, Summer

HDFS 983 - Research Practicum in HDFS

Credits 1-3

This course is designed for students in the Prevention Science in HDFS doctoral program to gain practical, advanced skills in human development and family science research through a structured research experience. This may consist of data collection, data analysis, literature reviews, dissemination of findings, as well as other relevant research experiences.

Repeat for Credit
Y

Requisites
Prerequisite: HHS 888 Corequisite: HDFS 809 or CFT 983

Typically Offered
Fall, Spring, Summer

HDFS 990 - Dissertation Proposal Seminar

Credits 1

Dissertation Proposal Seminar

Repeat for Credit
Y

Typically Offered
Other

HDFS 999 - PhD Research in Human Development and Family Sciences

Credits 1-18

PhD research in human development and family sciences.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

HHS 100 - Well-being 1: You and Community

Credits 1

Explore the meaning of well-being and how we foster it in the context of community. Learn how a better understanding of ourselves leads to greater well-being and sense of community.

Note
This course must be taken prior to other HHS Well-Being Courses. (HHS 200 and HHS 300)

Repeat for Credit
N

Typically Offered
Fall, Spring

HHS 200 - Well-being 2: Mind and Body

Credits 1

Reflect on and assess current physical, psychological, and social well-being. Utilize evidence-based recommendations, reliable sources, and personal strengths to set and track progress towards mind, body, and relational goals.

Repeat for Credit
N

Requisites
Prerequisite: HHS 100 OR [HHS 101 AND HHS 201].

Typically Offered
Fall, Spring

HHS 300 - Well-being 3: Money and Meaning

Credits 1

Explore components of financial well-being and how to access advice when major life issues arise with financial implications. Examine career well-being as a broad concept and how it relates to our sense of personal well-being, purpose, and meaning. Reflect on the interrelationship of career, social, financial, physical, and community well-being across the lifespan.

Repeat for Credit
N

Requisites
Prerequisite: HHS 100 OR [HHS 101 AND HHS 201].

Typically Offered
Fall, Spring

HHS 385 - Problems in Health & Human Sciences

Credits 0-18

Independent study.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

HHS 400 - Wichita State University Nursing Partnership

Credits 0

Wichita State University Nursing Partnership

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

HHS 499 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

HHS 888 - Foundations in Research Methodology

Credits 3

Graduate level course provides a foundation in research methodology in health and human sciences.

Repeat for Credit
N

Typically Offered
Fall

HHS 995 - Grant Writing and Management

Credits 3

Focus on identifying extramural funding sources, grant writing, and managing grants.

Repeat for Credit
N

Requisites

Prerequisite: HHS 888 or other graduate-level research methods course.

Typically Offered
Spring

HINDI 101 - Hindi I

Credits 4

Introduction to the structure of modern Hindi. Listening, speaking, reading, and writing.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Global Issues and Perspectives

HINDI 102 - Hindi II

Credits 4

Continuation of Hindi I, completion of the basic structural and linguistic principles of Hindi.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Aesthetic Interpretation
K-State 8 Tag 2
Global Issues and Perspectives

HINDI 201 - Hindi III

Credits 4

Continuation of Hindi II. Listening, speaking, reading, and writing.

Repeat for Credit
N

Typically Offered
Fall, Spring

HINDI 301 - Hindi IV

Credits 3

Continuation of Hindi III. Listening, speaking, reading and writing.

Repeat for Credit
N

Typically Offered
Fall, Spring

HIST 100 - Introduction to History

Credits 3

What history is, how it is produced, and what its functions are. Designed for freshmen who want an introductory course which explains the methodology, purposes, and career options of the discipline.

Repeat for Credit
N

Typically Offered
Fall, Spring

HIST 101 - Western Civilization I: Ancient Greece to Early Modern Europe

Credits 3

Major trends in Western Civilization from its beginnings to roughly the end of the seventeenth century. The scope of this course includes ancient Greece and Rome, the Middle Ages, the Renaissance, the Reformation, and early modern Europe, but chronological and topical emphases vary with individual sections.

Note
Required of all majors in history.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Historical Perspectives

HIST 102 - Western Civilization II: Europe in the Modern World

Credits 3

Principal developments since the beginning of the eighteenth century. Scope includes the Enlightenment, the French Revolution, the Industrial Revolution, nationalism, imperialism, communism, fascism, the two world wars, the Holocaust, and Europe during and after the Cold War. Chronological and topical emphases vary with individual sections.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Historical Perspectives

HIST 103 - Overseas European Studies

Credits 2-3

Selected aspects of European history and culture with readings, lectures, and discussions which will relate historical events to places visited.

Repeat for Credit
N

Typically Offered
Intersession

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Historical Perspectives

HIST 105 - Western Civilization: The Rise of Europe (Honors)

Credits 3

Major trends in Western history from the beginnings of European civilization to the end of the seventeenth century. Scope includes classical antiquity, the Middle Ages, the Renaissance, the Reformation, and early modern Europe, but chronological and topical emphases vary with individual sections.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 106 - Western Civilization: The Modern Era (Honors)**Credits 3**

Principal developments in Western civilization from the beginning of the eighteenth century to the present. Scope includes the Enlightenment, the French Revolution, the Industrial Revolution, nationalism, imperialism, communism, fascism, and the two world wars, but chronological and topical emphases vary with individual sections.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 111 - World History to 1450**Credits 3**

Major developments in the history of the world from the earliest civilizations to the eve of European expansion in the fifteenth century. Comparison of key trends and conditions in different parts of the world. Topics include the agricultural revolution, the birth of the city, the

formation of states and empires, and the emergence of world religions.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 112 - World History From 1450**Credits 3**

Major trends in the history of the world from the 15th century to the present. Global patterns of contact, mutual influence, and interdependence.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 151 - History of the United States to 1877**Credits 3**

Includes ethnic, social, military, political, economic, diplomatic, and ideological themes. The chronological emphasis varies with instructor. The aim of the course is to achieve a broad understanding of American civilization to 1877.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

HIST 152 - History of the United States Since 1877**Credits 3**

Ethnic, social, political, economic, and diplomatic history. The goal of the course is to achieve a broad understanding of American civilization since 1877.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

HIST 155 - Introduction to US Military History**Credits 3**

Studies the history of the military and warfare in the United States from 1775 to the present. Includes strategic, operational, political, and social developments to explain how warfare has shaped US society and culture, and how they, in turn, shaped the US military. Topics include the history and development of the armed forces, the operational history of US wars, the place of the military in US society and culture, the influence of technological changes on warfare, and the role of women and people of color in the armed forces over time.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Historical Perspectives

K-State 8 Tag 2

Global Issues and Perspectives

HIST 200 - Topics in History for Freshmen and Sophomores**Credits 1-3**

Exploration of the historical dimensions of a particular topic or theme.

Repeat for Credit

Y

Typically Offered

Other

K-State 8

Historical Perspectives

HIST 250 - Russian Culture and Civilization**Credits 3**

Russia's past and present in the light of principle ideologies with emphasis upon fine arts, literature, music, religion, politics, and education. Equal time will be given to the Tsarist and the Soviet periods.

Note

Knowledge of Russian language is not required.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

RUSSN 250

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

HIST 297 - Honors Introduction to the Humanities I**Credits 3**

Study of selected major works of history, literature, and philosophy which have been of central importance in the Western cultural tradition. Considerable emphasis is placed on classroom discussion and writing interpretive essays.

Note

Limited to entering freshmen students. Consent of instructor

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

ENGL 297, MLANG 297, PHILO 297

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

HIST 298 - Honors Introduction to the Humanities II**Credits 3**

Continuation of HIST 297.

Repeat for Credit

N

Requisites

Prerequisite: HIST 297 or consent of instructor.

Typically Offered

Spring

Crosslisted

ENGL 298, MLANG 298, PHILO 298

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

HIST 300 - Introduction to Historical Thinking**Credits 3**

Introduces the history major to the major principles of historical thinking as well as providing an introduction to the methodologies of historical research.

Repeat for Credit

N

Requisites

Prerequisite: Declared major in History.

Typically Offered

Fall, Spring

HIST 301 - Topics in History**Credits 3**

Detailed investigation of a particular theme, event, or problem in history.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

HIST 303 - Latin American History and Civilization**Credits 3**

Introduces the history of Latin America from the earliest times to the present. Argentina, Brazil, Cuba, Mexico, and Peru will receive special attention. Themes treated will include race and ethnicity, cultural survival, revolution and authoritarianism, women and family, and the role of economic development in Latin American history.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 311 - Race & US Foreign Relations**Credits 3**

Introduction to the impact on racial issues on U.S. international relations, especially relations with Africa, Asia, the Pacific Islands, and Latin American from the early 1800s through the conclusion of the Cold War (1991). Focuses on issues such as immigration, colonization, and decolonization, economic influences, and military deployment.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

HIST 320 - History of Technology**Credits 3**

This course focuses on the development of technology from ancient times to modern day, with emphasis on technology and its impact on American society from colonial times to present. Students will prepare a portfolio project that will feature a research or service learning component.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100.

Typically Offered

Other

K-State 8

Historical Perspectives

HIST 330 - History of East Asian Civilizations**Credits 3**

East Asian history from earliest times to the present. Social structures, beliefs, and values during key periods of Chinese and Japanese history. Major developments in religion, philosophy, literature, and the arts.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 331 - Introduction to Japan**Credits 3**

Historical survey of Japan from prehistoric times to the present day, which may include material on society, politics, and culture.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

GEOG 331

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 332 - Introduction to China**Credits 3**

Survey of the history, geography, politics, and culture of China from prehistoric times to the present day.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

GEOG 332

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 333 - War and Conquest in Hispanic America**Credits 3**

Explores the conquests of Spanish America: how did just a few hundred Spaniards topple the expansive Aztec empire? What are the legacies and myths of conquest that persist today? Examines relations between indigenous inhabitants of the Americas and European conquistadors through

historical texts, artwork, and literature.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 340 - The Middle Ages, 500-1500 AD

Credits 3

Surveys the consensus schemas that drive academic approaches to the culture of western Europe between roughly 500 and 1500 AD including the "Tripartite Chronological (Antiquity, Middle Ages, Modern), "Western Civilization," "Meta-Narrative of Progress," "Clash of Civilizations," and "Global Middle Ages."

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Global Issues and Perspectives

HIST 350 - Hollywood and the Military

Credits 3

Considers the impact of changes in the political, social, cultural, and geopolitical context on Hollywood's representation of the military.

Repeat for Credit

Y

Typically Offered

Fall, Summer

HIST 352 - Cold War Cultures

Credits 3

Examines how the Cold War (1945-1991) conflict was not only a diplomatic and military conflict. It also influenced US culture and other societies' cultures in profound ways. This course examines Cold War life for citizens of all corners of the globe on both sides of the Iron Curtain and in the Global South.

Repeat for Credit

N

Typically Offered

Fall-Even Years

HIST 357 - Chemical Warfare, 1914-Present

Credits 3

Interdisciplinary look at chemical warfare. Encourages students to engage with the nature of chemical weapons as a way to help them better understand the implications of their use over the last century. Students are asked to think about the ways in which chemical compounds created for benign purposes can be subverted and used as weapons regardless of their creator's original intent.

Repeat for Credit

N

Typically Offered

Spring-Even Years

Crosslisted

CHM 357

HIST 361 - Blood and Steel: War in Europe since 1618

Credits 3

A survey of European warfare that focuses on military operations and grand strategy. It engenders a deeper understanding of the development of European military practices and institutions and how war has shaped Europe's history.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2
Historical Perspectives

HIST 363 - A World in Flames: Global World War II

Credits 3

A global exploration of the origins, conduct, and consequence of World War II.

Repeat for Credit
N

Typically Offered
Other

HIST 364 - The Pacific War: World War II in Asia and the Pacific

Credits 3

Explores the origins, conduct, and consequences of World War II in Asia and the Pacific. It places particular emphasis on this war's roots in the intensifying Sino-Japanese animosities by the early twentieth century, the war's interconnections to the concurrent conflicts in Europe, and the US significance to course and outcomes of the war.

Repeat for Credit
N

Typically Offered
Spring

HIST 365 - Bloody Battlefields: WWII in Europe

Credits 3

From Hitler's rise to power, to siege of Stalingrad, to the Normandy landings, this class will follow the unfolding of WWII on both eastern and western fronts until the meeting of Soviet and American troops on the Elbe River in 1945. In addition to the belligerents' grand strategies and the unfolding of specific battles, this class will look at the ways the war affected people and societies.

Repeat for Credit
N

Requisites

Recommended Prerequisite: HIST 155

Typically Offered
Fall-Odd Years

HIST 370 - Pirates and Piracy in Global History

Credits 3

A global history of pirates and piracy, from Greece and Rome to the Caribbean, the South China Sea, and the Dark Web.

Note
No prior history experience needed.

Repeat for Credit
N

Typically Offered
Fall or Spring

HIST 388 - Nazi Germany and the Holocaust

Credits 3

Examines the political, social, economic, and intellectual developments in Germany from World War I to the end of World War II, including the Nazi ideology and the Holocaust.

Repeat for Credit
N

Typically Offered
Other

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Historical Perspectives

HIST 399 - Honors Seminar in History

Credits 3

Selected topics in history.

Repeat for Credit
N

Requisites

Prerequisite: Membership in honors program or consent of instructor.

Typically Offered
Other

K-State 8
Historical Perspectives

HIST 400 - Grand Strategy Simulation

Credits 1

The annual grand strategy simulation provides students with a high-impact, applied learning experience that pushes them to move from theory to practice and implement their strategic-thinking skills they have gained in their classes by playing out a realistic crisis scenario.

Repeat for Credit
Y

Requisites
Prerequisite: HIST 155 or POLSC 145
Corequisite: being enrolled in the Grand Strategy Certificate

Typically Offered
Spring

HIST 401 - History Workshop

Credits 3

Provides students the opportunity to engage in historical research and writing in innovative formats beyond the traditional term paper, with an emphasis on primary source analysis and/or digital humanities.

Repeat for Credit
Y

Typically Offered
Fall, Spring

HIST 410 - History of K-State Workshop

Credits 3

Investigation of the history of Kansas State University and its students, carried out in the University Archives. Students pursue guided individual research projects and present their results in a public-facing way.

Repeat for Credit
N

Typically Offered
Fall

HIST 498 - Senior Thesis

Credits 3-6

Senior Thesis

Repeat for Credit
N

Requisites
Prerequisite: Senior standing.

Typically Offered
Fall, Spring, Summer

K-State 8
Historical Perspectives

HIST 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Historical Perspectives

HIST 501 - Japan's Samurai Age

Credits 3

The history of Japan from earliest times to the fall of the Tokugawa shogunate in 1868, including major developments in political institutions, social structures, and religious beliefs. Examines the rise and development of the warrior class that dominated society and government for much of this period.

Repeat for Credit

N

Typically Offered

Other

HIST 503 - Historical Study in International Setting

Credits 2-3

Course work that enhances the experience of international travel and study. Requires an historical engagement with the travel experience through readings, lectures, discussion, and written work.

Note

Instructor permission

Repeat for Credit

N

Typically Offered

Summer

HIST 504 - Intellectual History of Early China

Credits 3

Introduction to the development of Chinese thought during the period from about 1200 BC to 100 BC, with emphasis on the foundational ideas of Confucianism, Daoism, and Legalism and their incorporation within the emerging imperial order.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 505 - South Asian Civilizations

Credits 3

Interdisciplinary survey of the development of civilization in India, Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, and Afghanistan, including geography, philosophy, social, economic, political institutions, and historical movements.

Repeat for Credit

N

Requisites

Prerequisite: Three hours of social science or junior standing.

Typically Offered

Fall-Even Years

Crosslisted

GEOG 505, ECON 505, POLSC 505, SOCIO 505, ANTH 505

HIST 506 - Modern India and South Asia

Credits 3

The history of India, Pakistan, and Bangladesh since 1500, beginning with Mogul rule and continuing through European colonialism, the anti-imperial struggle, and the troubled transition to independence.

Repeat for Credit

N

Typically Offered

Other

HIST 507 - China Since 1644

Credits 3

China from the founding of the Manchu Qing dynasty to the present. Includes the western imperialist challenge in the nineteenth century, the Revolution of 1949, and the post-Mao Reforms. Emphasis on social, political and intellectual changes in the context of increasing contact with western nations and Japan.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall-Even Years

HIST 508 - Introduction to Modern East Asia

Credits 3

The history of China, Japan, and surrounding countries

including the arrival of Europeans in the sixteenth century, reactions to Western imperialism, the rise of nationalism, and revolution. The impact of the two world wars, the era of post war developments, communism in China, democracy in Japan, and the end of Western colonialism are also examined.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 509 - Japan Since 1550

Credits 3

Japan from reunification in the sixteenth century through the Tokugawa and Imperial eras to the postwar recovery. Emphasis on understanding modern Japan as the product of traditional culture, the Meiji Restoration, and World War II.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 510 - World War I

Credits 3

Examines the origins, events and consequences of the "war to end all wars." The impact and influence of the war on colonialism, imperialism, and popular culture will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 511 - Environmental History

Credits 3

An introduction to environmental history as an academic specialization through selected reading and topical lectures. The course emphasizes the study of people in nature through time; it stresses people's response to environmental change through three broadly defined periods: pre-industrial, modern industrial, and contemporary.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 512 - Women in European History

Credits 3

A study of women in primitive European societies, in preindustrial times, and in the industrial era. Emphasis will be upon the position and role of women within the society.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 513 - Battles and Leaders

Credits 3

The course will emphasize military organization, tactics and strategy, generalship and grand strategy, manpower and logistics, and the wartime ramifications of war on land, at sea, and in the air.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 515 - History of Sport**Credits 3**

The historical development of sport (especially in Europe and North America) including the growth of competition, the rise of mass spectator sports, elitism, and the changing function of sport. History of sport as business and history of the relationship between sport and other institutions.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

Crosslisted

PE 515

HIST 516 - The Modern Middle East**Credits 3**

History of Islam and the broader Middle East including North Africa since 1500. Topics covered include the rise of early modern empires, closer contact with Western Europe and East Asia, the impact of Western imperialism, state-sponsored defensive reforms, the development of religious modernism, social movements and constitutionalism, the emergence of nationalism, oil-dependent economies and rentier states, the origins of religious activism, and the contemporary struggle for civil rights.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 517 - Iranian People Since Antiquity**Credits 3**

Critical introduction to the history, geography, society, politics, economy and culture of Iran (historical Persia) from prehistoric times to the present day.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing recommended.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 519 - Science and Technology in the United States**Credits 3**

A survey of U.S. science and technology from the colonial era to the present, with special attention to how the wider social context, including the role of institutions and government, affected processes of scientific and technological development. Coverage also of the challenges of addressing the social problems that arose in connection with scientific and technological development throughout U.S. history.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 520 - Death and Dying in History**Credits 3**

Examines European and American attitudes toward death and dying in various historical periods. Topics include: death and dying in the European Middle Ages and in nineteenth and twentieth century America, the impact of the Nazi Holocaust on modern opinions about death, suicide as a historical problem, the fear of cancer in modern

times, and others.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring

HIST 521 - History of Christianity

Credits 3

A history of the Christian religion from the era of Jesus Christ to the present with special emphasis on people and ideas.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 522 - Religion in American History

Credits 3

A study of the impact of religion on American culture and of American culture on religion, the Social Gospel and related issues, and the interrelationship of Christianity and politics.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 523 - A History of the Occult and Witchcraft

Credits 3

A study of the history of the occult and witchcraft in Western civilization with special attention to religious,

intellectual, and social issues and influences.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 524 - The History of Baseball in American Culture

Credits 3

The history of baseball from its origins in the early nineteenth century to the present, with emphasis on the major leagues and their collateral organizations but also with attention to semi-pro and amateur baseball and to the old Negro Leagues. The history of the game will be examined in the context of American history with special reference to social issues, politics, religion, literature, music, and the medial.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 525 - Colonial America

Credits 3

About 1450 to 1763. Includes the European background of North American colonization, the rivalry for new world empire, seventeenth century English colonial foundations, and development of the various colonial societies.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 526 - The American Revolution

Credits 3

Eighteenth century colonial background of the Revolution and the revolutionary era itself, 1763-1789. Stresses ideological and other causes of the Revolution, the course of the war, its social results, the Confederation and its demise.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 527 - The Early National Period**Credits 3**

Foundations of the new nation from the adoption of the Constitution to the conclusion of the War of 1812, approximately 1789-1815. Stresses the contest between Hamiltonians and Jeffersonians for philosophical dominance of institutions; other topics include diplomacy, westward expansion, military developments, the social and intellectual life of the era.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 529 - Civil War and Reconstruction**Credits 3**

1848-1877. Examination of the sectional controversy, the failure of the political system to resolve peacefully the conflict between North and South, the resort to arms, the nature of the post-war settlement. Emphasis is on the attempt of mid-nineteenth-century American leaders to deal with the complex problems of slavery and race.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 530 - United States in the 19th Century**Credits 3**

Explores the history of the United States during the 19th century and traces the transition of the country from a fragile, uncertain republic to a robust imperial power standing in the first rank of the world's nations.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 531 - The United States in the Twentieth Century**Credits 3**

Examines the creation of modern America, 1890 to the present. Emphasis on the social and cultural roots, and political consequences, of Progressivism, World War I, the Great Depression, World War II, the Sixties, and Post-Vietnam America.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 533 - Topics in the History of the Americas**Credits 1-3**

Provides instructor and students the opportunity to investigate in detail a particular theme, event, or problem in the history of North, Central, or South America. Topics vary.

Repeat for Credit

Y

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 534 - Social History of Medicine**Credits 3**

An exploration of the development of American social thought and practices regarding health care from colonial times to the present. The course stresses changing cultural attitudes toward disease as well as alterations in social practices and institutions related to healing. Special emphasis is given to the institutional development and professionalization of modern medicine.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 536 - The American West**Credits 3**

Primary emphasis on the nineteenth century when Americans were rapidly spreading across the continent. Also examines the earlier developments of the frontier and considers the twentieth century role of the trans-Mississippi region.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 537 - History of Indigenous Peoples of North America**Credits 3**

A survey of the Indigenous peoples of the North American continent, with a focus on the United States, from 30,000 BP to the present. Drawing on the work of anthropologists, ethnologists, historians, and the voices of Native peoples, this course provides students a Native-based perspective that challenges common stereotypes and provides a pathway for understanding contemporary sovereignty movements.

Repeat for Credit

N

Typically Offered

Other

HIST 538 - Women in Sport**Credits 3**

A survey of the history of the female athlete, with special emphasis on the significance of women in sport in the United States. Themes covered include the evolution of the social roles of sport, the relationship between sport and gender, and athletes' construction of identity.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 539 - African-American History**Credits 3**

An overview of the African-American experience from the seventeenth century through the civil rights movement. Emphasizes social, legal, economic, political, and intellectual aspects of black history as well African-American contributions to American life and culture.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 540 - Women in America, 1600 to the Civil War**Credits 3**

An overview of the history of American women from the beginning of the European colonization to the Civil War. Women's changing social role and its relation to the major transformations in American culture and society during this period is stressed. Special emphasis is given to ethnic, racial, and class variations among women.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 542 - Women in America, Civil War to the Present**Credits 3**

An overview of the history of American women from the end of the Civil War to the present. Examines women's changing role in modern industrial society with special emphasis upon the women's rights movement of both the nineteenth and twentieth centuries.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 543 - Forging an American Empire: US Foreign Relations to 1920**Credits 3**

History of U.S. foreign relations from its origins in the colonial era through World War I.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 544 - From World Power to Superpower: US Foreign Relations since 1920**Credits 3**

History of United States foreign relations from the end of World War I through the present day. Explores how the United States engaged the world as a global power.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HIST 545 - War in the Twentieth Century**Credits 3**

Considers the military theory and practice, the technology, and the political and ideological constraints of World Wars I and II, the Spanish Civil War, the Korean War, and the Indo-chinese wars. Students are to gain an understanding of the varieties of military experience in the twentieth century, including civil wars, "total war," and guerrilla warfare.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 546 - History of American Military Affairs

Credits 3

Deals with the development of military institutions in colonial America and the United States, civil-military relations and conflicts between political constraints and strategic demands, popular attitudes toward the military, and the rise of the military-industrial complex.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 547 - Economic History of the United States

Credits 3

Major topics in American economic history from the colonial period to the present. Focus is on nineteenth- and twentieth- century issues, including the rise of big business; the expanding role of the government in the economy; the Great Depression; the postwar boom and its end; issues of class, race, and gender; America's shifting roles in the global economy.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall

HIST 549 - Modern Africa from 1850

Credits 3

Introduction to modern African history since 1850. Key topics include the establishment and impact of the colonial empires that dominated Africa between the 1880s and 1960s; the process of decolonization; African responses to colonial rule; and the development of post-Independence Africa with a special emphasis on the challenges faced by African countries.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing recommended.

Typically Offered

Fall, Spring, Summer

HIST 551 - History of Family Violence

Credits 3

Explores the history of family violence in America as a social, cultural, legal, and public policy issue from colonial times to the present. Stress is placed upon the cultural roots and evolution of domestic law. The development of state-controlled social welfare agencies as well as the emergence of the "battered women's movement" is particularly emphasized.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Intersession

HIST 553 - History of American Culture

Credits 3

Main emphasis is on political, religious, and social thought and ideology, 1620 to present.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 554 - History of the South

Credits 3

Topical analysis of important issues in Southern history. Compares the plantation myth of popular films with

interpretations by important historians. Emphasis on plantation agriculture, slavery, race relations, class, and gender in the Old South. Post-Civil War topics include federal Reconstruction efforts, segregation, economic reform, and the modern Civil Rights movement.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 555 - American Constitutional History

Credits 3

Survey of constitutional and legal development from colonial times to the present. English constitutional ideas and the common law in the American colonies, formation of the Constitution, the role of the Supreme Court, development of the modern American legal system, growth of the legal profession, the problem of civil liberties. The course offers insight into the relationship of constitutional-legal institutions to American society.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 556 - Bill of Rights in American History

Credits 3

This course provides a topical survey of the American Bill of Rights from the colonial era to the present. It begins with the origins of American rights in England and colonial America. An analysis of the need for a Bill of Rights at the founding and Supreme Court interpretations in 1835 and during the Reconstruction era follow. The bulk of the course is concerned with the nationalization and expansion of the Bill of Rights in the twentieth century and its meaning in the everyday lives of American citizens.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 557 - History of American Agriculture

Credits 3

Concentrates on the period since 1850 in an attempt to acquaint the student with the political and economic history of American agriculture. No attempt will be made to present the scientific or technological side of agriculture in detail, but agriculture will be shown in relation to the life of the entire United States. The life of the farmer and his family, the relationship between agricultural changes and other parts of the economy will be part of this course. Special attention will be paid to agriculture in Kansas and the Great Plains.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 558 - History of Kansas

Credits 3

Land, people, and cultural developments in Kansas, from the earliest written records to the present. Provides the student with an intimate understanding of the state of Kansas.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring

HIST 559 - History of Aztecs, Inca, and Maya

Credits 3

Introduction to the history of ancient Mesoamerican and Andean civilizations through a multi-disciplinary approach combining materials from the fields of history, art history, anthropology, and archaeology.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Spring

HIST 560 - Latin American Nations

Credits 3

Survey of economic, social, and political developments of the Latin American nations from independence to the present decade with emphasis on Argentina, Brazil, Peru, Chile, and Mexico. Stresses reform and revolution of the last 50 years.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 561 - Colonial Hispanic America

Credits 3

Iberian and indigenous American background, exploration, conquest, settlement, and development of Latin America. Stresses growth of mestizo culture, colonial styles of living, and wars of independence.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 562 - Modern Mexico

Credits 3

Brief survey of lines of national development, 1821-1910, and major emphasis on the twentieth-century revolution and its reforms (1910-1940) as well as its subsequent implications.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 564 - History of Mass Communications in America

Credits 3

Growth and Development of media and media technology in the United States and their economic, political, and social significance.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

Cross-listed: MC 564.

HIST 565 - History and Culture of Greece

Credits 3

The rise of civilization in the ancient Near East, the migrations of the Greeks and the Heroic Age, the Greek city-states, commerce and colonization, the Persian invasion, Athens' leadership of Greece, the war between Athens and Sparta, Alexander the Great, and the total Hellenic achievement.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 566 - History and Culture of Rome

Credits 3

Examines the various theories of Rome's origin, the causes, problems, and influences upon the republican government, political and economic problems of Roman expansion, and the Roman world. Various reforms including those of the Gracchi, Caesar, and Augustus. Contact with Greece and the older areas of civilization. The Roman imperial system, the many causes of Rome's fall, and Rome's role as a synthesizer of the ancient classical culture.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 567 - Europe in the Middle Ages

Credits 3

Europe from the fall of the Roman Empire to the thirteenth century. Investigates the conflict and interaction of Roman, Christian, and Germanic ideals and attitudes in the early Middle Ages, and the increasing complexity and sophistication of society, culture, religion, and government of the high Middle Ages.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 568 - The Renaissance

Credits 3

The Italian Renaissance as a major phase in the history of Western civilization and its spread to northern Europe.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 569 - The Reformation

Credits 3

A study of the Protestant, Catholic, and Radical Reformations with special attention to Luther, Calvin, the origins of the Church of England and the Presbyterian Church, the Anabaptists, the Puritans, and Roman Catholic Reform, and the impact of religious developments on the political, economic, social, and intellectual history of the Western world. Covers the period from approximately 1500 to 1660.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 570 - Europe in the Seventeenth Century

Credits 3

Surveys the economic, social, political and intellectual history of western Europe in the seventeenth century, a period marked by economic depression, international conflict, and domestic revolutions as well as by cultural achievement. Emphasizes the complex interaction among social groups; the rise of a European state system; the development of constitutional monarchy in England and absolute monarchy in France; and the change in values generated by the scientific revolution.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 571 - Eighteenth-Century Europe

Credits 3

Europe from the death of Louis XIV in 1715 to the fall of Napoleon in 1815. The origins and development of the French Revolution and the Napoleonic legacy, also examines reform and counter-revolutionary movements in England, Italy, Russia, Poland, and the Germanies.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 572 - Nineteenth Century Europe**Credits 3**

The history of Europe from the French Revolution to the end of the first World War. Major topics covered will include the rise of conservatism as an ideology and its application in practice, the nature of liberalism and socialism, the impact of science and technology, the origins and course of World War I.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 573 - Twentieth Century Europe**Credits 3**

Examines the political, social, and intellectual developments of Europe in the period of the two world wars. Emphasis on the failure of democracy and the rise of competing antidemocratic and nondemocratic mass movements and ideologies. The course will also deal with the attempted system of collective security, its failure, and the origins and course of World War II.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 574 - Europe since World War II**Credits 3**

Postwar European society, politics, economy, and culture. The effects of total war on the population; restoration and reconstruction. The influence of the U.S. and U.S.S.R. on Europe. Capitalism, socialism, and communism in technological society. European unity movements and their conflicts with traditional values.

Repeat for Credit

N

Typically Offered

Other

HIST 576 - European International Relations to 1815**Credits 3**

The nature, evolution, and function of the diplomatic system for the Ancient World to 1815. Analyzes the Greek and Roman diplomatic tradition, international relations during the Medieval, Renaissance, and Early Modern periods, and the works of various theorists. Sophomore standing.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 577 - European International Relations Since 1815**Credits 3**

The nature, evolution, and functions of the European diplomatic system from 1815 to the present. Focuses on the Vienna settlement, the Eastern Question, the Crimean War, Italian and German unification, origins of World War I,

international developments between the two world wars, the cold war, and the post-cold war era. Includes analysis of major theorists. Sophomore standing.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 578 - Central Europe, 1500-1914

Credits 3

The diplomatic, military, political, cultural, and social aspects of the Hapsburg empire in Central Europe from its foundation to its dissolution in the twentieth century.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 579 - The British Isles to 1603

Credits 3

English, Scottish, and Irish culture in the medieval and pre-modern periods. Early folk societies, feudalism, the church in society and politics, the origins of representative institutions and the religious reformations are studied topically.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 580 - The British Isles Since 1603

Credits 3

English society and politics in modern times with reference also to Scotland and Ireland. Emphasis on topics such as the three orders of society (king, lords, and commons), the churches and religion, the appearance of parliamentary sovereignty, the industrial revolution, and the extension of democratic institutions.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 581 - Gender and Sexuality in Greece and Rome

Credits 3

Provides an introduction to constructions of gender and sexuality with special focus on their intersections with culture, ethnicity, and class. Course will combine close readings of primary texts and discussions of material culture with secondary literature. Broader discussions will emphasize change over time, noting not only how gender and sexuality develop and evolve across centuries of Greek and Roman culture but also how they influenced subsequent Western cultures. By means of close readings of these texts students will practice analyzing, interpreting, and contextualizing literature and material culture, and also come to a greater appreciation of how antiquity and modernity construct gender and sexuality. Course format will involve lecture combined with discursive analysis of texts, material culture, and especially visual arts.

Repeat for Credit

N

Typically Offered

Spring

HIST 583 - History of France, 1400-1715

Credits 3

France from the conclusion of the Hundred Years War to the death of Louis XIV. French economy, society, and royal administration, and the changes generated in these areas by significant events: the Reformation and the Wars of Religion; the rise of France to world power; peasant uprisings and constitutional crisis; and the reforms of

Richelieu, Colbert, and Louis XIV. Trends in art, architecture, and philosophy.

Repeat for Credit
N

Requisites
Prerequisite: Sophomore standing.

Typically Offered
Other

HIST 584 - France and its Empire, 1815-Present

Credits 3

Emphasis on the development of French democracy and France's place in the world. Covers the world wars and French imperialism as well as social and gender change in French history.

Repeat for Credit
N

Requisites
Prerequisite: Sophomore standing.

Typically Offered
Fall, Spring, Summer

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Historical Perspectives

HIST 585 - Medieval Christianity

Credits 3

A survey of the development of Christianity in western Europe during the Middle Ages (c. 500-1500). Topics include the development of the papacy and the ecclesiastical hierarchy, the role of kings and other rulers, the Crusades, scholasticism, purgatory, penance, monasticism, specific religious orders like the Franciscans, baptism, marriage, asceticism, how medieval Christians read the Bible, saints, the roles of women, and heresy.

Repeat for Credit
N

Requisites

Prerequisite: Sophomore standing.

Typically Offered
Fall, Spring

HIST 586 - Advanced Seminar in History

Credits 3

An undergraduate seminar that focuses on the intellectual principles of the historical discipline as well as the fundamental research techniques and writing skills used by historians. Each section of the Seminar will center on a particular topic or historical problem. The students will prepare a research project pertinent to the seminar topic. All history majors must take this seminar to complete the requirements for their degree.

Repeat for Credit
N

Requisites
Prerequisite: Six hours of History courses at or above the 500 level.

Typically Offered
Fall, Spring

HIST 587 - Nineteenth-Century Imperial Germany

Credits 3

Central Europe in the French Revolutionary era, the revolutions of 1848, German unification, imperial Germany, emphasizing social changes, especially the transition from agrarian to industrial society.

Repeat for Credit
N

Requisites
Prerequisite: Sophomore standing.

Typically Offered
Other

HIST 589 - Lost Kansas Communities

Credits 3

Combined lecture-field research course in the history of vanished Kansas towns. Overview of settlement,

persistence, and decline. Students also research a lost community of their choosing.

Note

Open to all majors with no pre-requisites, sophomore standing required.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore Standing.

Typically Offered

Fall, Spring, Summer

HIST 591 - The Russian Empire

Credits 3

Imperial Russia from the earliest Slavic tribes through 1881, with emphasis on Russia's heritage as a multi-ethnic state and the phenomenon of Russia's revolutionary intellectuals.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 592 - Twentieth Century Russia

Credits 3

The turbulent history of modern Russia, including the upheaval of the Russian Revolution and Civil War, Stalin's transformation of Soviet society, World War II, failed attempts to transform the Soviet system, and the fall of the Soviet Union.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 593 - The Vietnam War

Credits 3

Examines the origins, conduct, and long-term ramifications of the Vietnam War from 1945 to the present, emphasizing military, cultural, and environmental perspectives.

Repeat for Credit

N

Requisites

Recommended Prerequisite: HIST 155

Typically Offered

Spring-Even Years

HIST 595 - French Revolution, 1789-1815

Credits 3

The political, economic, cultural, and social development of France from the origins of the Revolution to the Congress of Vienna.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 597 - Topics in European History

Credits 1-3

Provides instructor and students the opportunity to investigate in detail a particular theme, event, or problem in European history.

Note

Topics vary. May be repeated for credit.

Repeat for Credit

Y

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Other

HIST 598 - Topics in Non-Western History**Credits 1-3**

Provides instructor and students the opportunity to investigate in detail a particular theme, event, or problem in non-Western history.

Note

Topics vary.

Repeat for Credit

Y

Requisites

Prerequisite: Sophomore standing.

Typically Offered

On sufficient demand

HIST 650 - Internship in History**Credits 3**

Practical professional experience involving at least three weeks in an archive, museum, historical library, or business. Student projects must be approved in advance and a report submitted at the end of the work period.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring, Summer

HIST 703 - Overseas European Studies**Credits 2-3**

Short-term, intensive, and in-depth study of various aspects of European history and culture with readings, lectures, discussions, and on-the-spot experiences which will relate historical events to the places visited.

Repeat for Credit

Y

Requisites

Prerequisite: Senior or graduate standing.

Typically Offered

Intersession

HIST 798 - Readings in History**Credits 1-3**

Students will read on a central theme, attend weekly discussions, and write a final report.

Repeat for Credit

Y

Typically Offered

Other

HIST 799 - Problems in History**Credits 1-18**

Intensive study of a particular phase of history. Students will attend weekly discussions and write a major research paper on their findings.

Repeat for Credit

Y

Typically Offered

Other

HIST 801 - Historiography**Credits 3-4**

Main currents in historical research, the writing of history, and the influence of the great historians from Herodotus to the present.

Repeat for Credit

Y

Typically Offered

Other

HIST 810 - Security Studies Methodology**Credits 2**

An exploration of commonly used research methods in

history and political science. Students will investigate quantitative and qualitative humanities and social sciences methodology through selected readings and limited research exercises.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 812 or concurrent enrollment.

Typically Offered

Fall, Spring

Crosslisted

POLSC 810

HIST 815 - Research Design in Security Studies

Credits 1

An exploration of research methods in history and political science culminating in a piece of original research in Security Studies.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 810 or POLSC 810.

Typically Offered

Fall, Spring

Crosslisted

POLSC 815

HIST 850 - History and Security: East Asia

Credits 3

An examination of the major historical problems and literature relating to national and international security in East Asia.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or POLSC 812 or concurrent enrollment.

Typically Offered

Other

HIST 851 - History and Security: Latin America

Credits 3

An examination of the major historical problems and literature relating to national and international security in Latin America.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or POLSC 812 or concurrent enrollment.

Typically Offered

Other

HIST 852 - History and Security: the Middle East

Credits 3

An examination of the major historical problems and literature relating to national and international security in the Middle East.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or POLSC 812 or concurrent enrollment.

Typically Offered

Fall

HIST 853 - History and Security: Russia/Central Asia

Credits 3

An examination of the major historical problems and literature relating to national and international security in Russian and Central Asia.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or POLSC 812 or concurrent enrollment.

Typically Offered

Other

HIST 854 - History and Security: South Asia**Credits 3**

An examination of the major historical problems and literature relating to national and international security in South Asia.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or POLSC 812 or concurrent enrollment.

Typically Offered

Other

HIST 855 - History and Security: Modern Africa since 1850**Credits 3**

Focuses on major political events and their repercussions. Key topics include war in African history, the creation and administration of colonial empires, decolonization, and the political and security struggles of the post-independence era.

Repeat for Credit

N

Typically Offered

Fall, Spring

HIST 860 - Topics in International History**Credits 3**

Introduce the most important themes and issues in historical topics and subjects of transnational and global significance. Contextualizes historical literature to help students prepare for teaching and for their general field exams.

Repeat for Credit

Y

Typically Offered

Fall, Spring

HIST 899 - Master's Research in History**Credits 1-18**

Master's Research in History

Repeat for Credit

Y

Typically Offered

Other

HIST 905 - Nineteenth-Century Europe**Credits 3**

An examination of the major historical problems and literature.

Note

This survey course is intended to introduce students to the most important themes and issues in their respective fields. It aims to put the historical literature in broad context to help students prepare for teaching and for their general field exams.

Repeat for Credit

Y

Typically Offered

Other

HIST 906 - Twentieth-Century Europe**Credits 3**

An examination of the major historical problems and literature.

Note

This survey course is intended to introduce students to the most important themes and issues in their respective fields. It aims to put the historical literature in broad context to help students prepare for teaching and for their general field exams.

Repeat for Credit

Y

Typically Offered

Other

HIST 907 - Colonial/Revolutionary America

Credits 3

An examination of the major historical problems and literature.

Note

This survey course is intended to introduce students to the most important themes and issues in their respective fields. It aims to put the historical literature in broad context to help students prepare for teaching and for their general field exams.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or concurrent enrollment.

Typically Offered

Other

HIST 908 - Nineteenth-Century America

Credits 3

An examination of the major historical problems and literature.

Note

This survey course is intended to introduce students to the most important themes and issues in their respective fields. It aims to put the historical literature in broad context to help students prepare for teaching and for their general field exams.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or concurrent enrollment.

Typically Offered

Other

HIST 909 - Twentieth-Century America

Credits 3

An examination of the major historical problems and literature.

Note

This survey course is intended to introduce students to the most important themes and issues in their respective fields. It aims to put the historical literature in broad context to help students prepare for teaching and for their general field exams.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or concurrent enrollment.

Typically Offered

Other

HIST 911 - Historical Approaches to Security

Credits 3

Examination of theories and approaches to military history and the history of international relations.

Repeat for Credit

Y

Typically Offered

Fall

HIST 912 - Historical Methods in Security Studies

Credits 3

Training in primary-source research in military history, foreign policy, and international relations.

Repeat for Credit

Y

Typically Offered

Spring

HIST 920 - Seminar in American Social History

Credits 3

This seminar is a course in which students are expected to study the primary source material for particular topics within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 921 - Seminar in Latin American History**Credits 3**

This seminar is a course in which students are expected to study the primary source material for particular topics within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 922 - Seminar in American Diplomatic History**Credits 3**

This seminar is a course in which students are expected to study the primary source material for particular topics within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 927 - Seminar in American Science and Technology**Credits 3**

This seminar is a course in which students are expected to study the primary source material for particular topics within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 928 - Seminar in American History**Credits 3**

This seminar is a course in which students are expected to study the primary source material for particular topics

within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 930 - Seminar in Modern European History

Credits 3

This seminar is a course in which students are expected to study the primary source material for particular topics within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 980 - Topics in European History

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute

and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 981 - Topics in Third World History

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 982 - Topics in the History of Science

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the

semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 983 - Topics in Military History

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 984 - Topics in American History

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 985 - Readings in History

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 986 - Problems in History

Credits 1-3

The topics courses are designed through reading and discussion to acquaint students with the literature in various fields or areas of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Within the general areas listed below, these courses may focus inter alia upon political, diplomatic, social, religious, intellectual, or environmental history.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Typically Offered

Other

HIST 987 - Seminar in Writing History for Publication

Credits 3

Students will take an example of their past or current written work (a seminar paper, a section of a thesis or

dissertation) and refine it for publication as a scholarly article. Emphasis will be on writing in a clear, correct, and well-organized way; on sharpening arguments and interpretations; on undertaking additional research in primary and secondary sources; and on critiquing the work of fellow students in a professional manner.

Repeat for Credit

Y

Requisites

Prerequisite: Must be enrolled in the Graduate Program.

Typically Offered

Other

HIST 990 - Seminar in Military History

Credits 3

Discusses such problems as command, the military and diplomacy, the officer corps, training, and women in the military.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or concurrent enrollment.

Typically Offered

Other

HIST 993 - History of Military Thought

Credits 3

The History of Military Thought from Machiavelli to the Present.

Repeat for Credit

Y

Requisites

Prerequisite: HIST 801 or concurrent enrollment.

Typically Offered

Other

HIST 999 - PhD Research in History

Credits 1-18

PhD Research in History

Repeat for Credit

Y

Typically Offered

Other

HM 101 - Freshman Seminar in Hospitality Management

Credits 1

A general orientation to the university, college, and department. Students will develop an understanding of Strengths Quest, academic career planning, the enrollment process, basic interviewing skills, resume development, and other issues as they apply to students in the hospitality management program.

Repeat for Credit

N

Requisites

Prerequisite: Hospitality Management majors only.

Typically Offered

Fall, Spring

HM 120 - Introduction to the Hospitality Industry

Credits 3

Overview of the hospitality industry. Survey of the history, scope, trends, and career opportunities that comprise the segments of the industry.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Historical Perspectives

HM 205 - Food Safety and Protection in Hospitality Operations

Credits 1

Overview of environmental issues that impact the hospitality industry. Includes: food safety principles and applications, Hazard Analysis Critical Control Point (HACCP) systems, and governmental regulations in the hospitality industry. Successful completion of the ServSafe Food Protection Manager Exam is required of all students in the course.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

HM 230 - Issues in Tourism**Credits 3**

An overview of the history and implications of travel and tourism focusing on the understanding of tourism from the perspectives of travelers and communities, while identifying tourism's economic, socio-cultural, and environmental impacts.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

HM 275 - Hospitality Work Experience I**Credits 1**

Planned experience in a hospitality operation; minimum of 200 hours exclusive of course work.

Note

Consent of School

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

HM 301 - Junior Seminar in Hospitality Management**Credits 1**

This seminar course will emphasize and reinforce important job searching skills including resume writing, interviewing techniques, job searches, communicating with employers before and after interviews, and social media management. This course will also introduce and emphasize critical thinking, research, and presentation skills that are needed for special projects in hospitality firms. After successfully completing the course, student will be able to search and secure an internship/professional position and to design, execute, and present a job related project in a hospitality firm.

Repeat for Credit

N

Requisites

Prerequisite: STAT 250; HM 101; Junior Standing. Co-requisite: HM 375

Typically Offered

Fall, Spring

HM 303 - Operational Research in the Hospitality Industry**Credits 3**

An applied research course for hospitality operations examining researchable ideas, data collection methods, data analysis, and interpretation and presentation of data, based on activities that occur in food and beverage, lodging, and event operations.

Repeat for Credit

N

Requisites

Prerequisite: STAT 250

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

HM 321 - Hospitality Service Systems

Credits 3

Examination of the complexities of leading quality and service within all segments of the hospitality industry. A focus on developing leadership, problem solving and process management skills, work methods, team development, and evaluation of service systems.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

HM 331 - Resort and Club Management

Credits 3

Exploration of the topics involved in resort and private club management, including operations, ownership and management structures, history and current trends, food and beverage service, marketing, and financial management. Exploration of topics involved in club management. Topics discussed are history and current trends of public and private clubs, food and beverage service, marketing, and event and financial management.

Repeat for Credit

N

Typically Offered

Fall

HM 341 - Principles of Food Production Management

Credits 3

Basic principles and theories of foodservice systems; menu planning; development, standardization, adjustment, and costing of quantity recipes; procurement and production of quality food; foodservice computer applications.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall, Spring

HM 351 - Commercial Food Production Management

Credits 3

Applications of principles of commercial food production and hospitality service management systems, including procurement, production, and service in a commercial foodservice system; quality and cost controls, employee performance evaluation, process improvement (i.e., work simplification, motion economy), and commercial foodservice equipment operation in the program's commercial foodservice facility.

Repeat for Credit

N

Requisites

Prerequisite: HM 205 or ServSafe Certification

Typically Offered

Fall, Spring

HM 361 - Hotel Operations

Credits 3

The development of the lodging industry and current trends. Organization and administration of hotel operations including front desk, housekeeping, laundry, sales/marketing, management, and other positions common to hotel operations.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Spring

HM 362 - Lodging Practicum

Credits 1

Supervised experiences in the operational areas of a lodging property.

Repeat for Credit

N

Requisites

Prerequisite: HM 361 or concurrent enrollment.

Typically Offered

Fall, Spring

HM 363 - Event Management**Credits 3**

This course introduces students to the key players and potential careers in the meeting and event industry. Students will explore various perspectives and responsibilities of event planners. Additionally, basic core concepts essential for planning a meeting will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Fall

HM 370 - The Business of Wedding Consulting**Credits 3**

This course will introduce the student to the competencies required to become a professional wedding consultant. Students will analyze essential services that provide the necessary infrastructure for a wedding event and will examine the business, creative, and practical aspects of coordinating the wedding environment.

Repeat for Credit

N

Typically Offered

Fall

HM 375 - Hospitality Work Experience II**Credits 1**

A 300-hour planned experience that combines observation, and employment within a hospitality operation. Must be completed in the student's declared track.

Repeat for Credit

N

Requisites

Prerequisite: HM 275; Consent of academic advisor. Co-requisite: HM 341, HM 361, or HM 363.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

HM 422 - Cost Controls in Hospitality Operations**Credits 3**

Application of accounting principles to analyze control measures used in lodging meeting/conventions/events, and commercial and noncommercial foodservice operations. Includes managerial, financial, and ethical considerations associated with procurement and human resources.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231; HM 341.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

HM 423 - Facility Management**Credits 3**

Evaluation and selection of equipment, maintenance contracts, layout, design, sustainability of hospitality operations, facility renovation, and selection of consultants. Assessment of safety and security measures and development of risk management programs to increase guest/customer safety.

Note

The course is offered during Fall semester on the Olathe campus and Spring semester on the Manhattan campus.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

HM 424 - Hospitality Sales and Promotion**Credits 3**

This course guides the student to explore and understand successful sales and sales management behaviors in the hospitality industry. This course will focus on relational selling and include both asking for sales and being a hotel sales manager. Students will develop a comprehension in selling approaches, conversations and presentations, and sales management techniques. Course topics will include hotel sales structures, duties and responsibilities, sales forms, relationships, prospecting, sales call planning, communicating the message, closing the sale, as well as how to motivate, compensate and train sales people specific to the hospitality industry.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250.

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

HM 426 - Fundraising and Nonprofit Events**Credits 3**

This course introduces students to the basics of fundraising and nonprofit events. Students will gain an understanding of the similarities and differences across nonprofit events and the key elements that make them successful. Students will build and develop a plan for all facets of fundraising or

nonprofit events.

Repeat for Credit

N

Requisites

Prerequisite: HM 363

Typically Offered

Fall

HM 427 - Travel and Dining Auction Event Management**Credits 3**

Application of event planning principles by analyzing previous travel and dining auctions, managing and executing the current year's travel and dining auction, and evaluating the results.

Note

Consent of School

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

HM 430 - Study Abroad Experience in Hospitality Management**Credits 1-3**

A Faculty-led Study Abroad Experience in Hospitality Management.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

HM 440 - Beverage Management

Credits 3

The study of historic, social, ethical, physiological, and legal issues relating to alcoholic beverage service and use in contemporary America with emphasis on responsible and knowledgeable service of beer, wine, and spirits in hospitality operations. Course will include beverage tasting and sensory analysis of products commonly served in the beverage industry. Must be 21 years of age to enroll in the course.

Note

100% Lecture and 50% Lab. 21 years of age or older.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

HM 442 - Introduction to Wines**Credits 1**

Overview of wine varietals and major wine regions of the world, tasting and identifying wine varietals based on their specific characteristics, proper purchasing and service of wines, and using wines to complement foods.

Note

21 years of age or older.

Repeat for Credit

N

Typically Offered

Fall, Spring

HM 462 - Advanced Wines**Credits 1**

An in-depth look at specific wine producing regions and sub-regions, a critical view of wines that define these regions, and preparation for service of wine in the hospitality industry.

Repeat for Credit

N

Requisites

Prerequisite: HM 440 or HM 442, and 21 years of age or older.

Typically Offered

Fall, Spring

HM 463 - Business Event Coordination**Credits 3**

In this course, students will plan a theoretical event from start to completion and learn details pertinent to the organization and execution of a business meeting. Topics include objectives, timelines, finance and contracts, site selection, program development, marketing, and evaluation.

Repeat for Credit

N

Requisites

Prerequisite: HM 363

Typically Offered

Spring

HM 464 - Revenue Management**Credits 3**

Application of revenue management, capacity management, duration control, pricing, and discounting as utilized in the hotel, restaurant, theme park, and car rental industries. Comprehensive examination of the complex factors that influence revenue management strategies and tactics in order to improve decision making and maximize revenue.

Repeat for Credit

N

Requisites

Prerequisite: HM 361, Junior standing.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

HM 465 - Catering and Banquet Management

Credits 3

Application and principles of catering management, including off-site and on-site functions. Organizational, logistical, aesthetic, and marketing aspects of the catering industry will be utilized and applied.

Repeat for Credit

N

Typically Offered

Fall

HM 475 - Internship in Hospitality Management**Credits 3**

Planned and supervised experience in a foodservice or hospitality operation; minimum of 400 hours.

Repeat for Credit

N

Requisites

Prerequisite: For HM majors and minors only, junior standing, HM 303, 500 hours of documented paid or volunteer experience in the hospitality industry, consent of instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

HM 482 - Human Resource Management in the Hospitality Industry**Credits 3**

A focus on the role of the hospitality manager in facilitating, training, and motivating employees. Discussion and analysis of methods to attract, select, develop, motivate, and retain quality employees to promote competitive organizational advantage in the hospitality industry.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

HM 499 - Problems in Hospitality Management**Credits 1-18**

Independent study under the supervision of a faculty member.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

HM 504 - Fair and Festival Management**Credits 3**

Examination of fairs, festivals, and special events. Understanding of the similarities and differences across different event types and the key elements that make them successful.

Repeat for Credit

N

Typically Offered

Fall

HM 621 - Hospitality Law**Credits 3**

Legal aspects of managing hospitality operations and responsibilities for the operations, patron civil rights, governmental regulations, franchising, and commercial transactions.

Repeat for Credit

N

Requisites

Prerequisite: HM 475.

Typically Offered

Fall

HM 624 - Procurement in the Hospitality Industry

Credits 2

Principles and theories of procurement of food and supplies for hospitality operations. Includes management, financial, safety, and ethical considerations in the procurement process.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 442..

Typically Offered

On sufficient demand

HM 640 - Entrepreneurship in Hospitality Management

Credits 3

Development and management of small businesses or private practice within the dietetics or hospitality industry. Business plan development, marketing, cost considerations. Overview of consulting to healthcare and hospitality operations and examination of skills required for success.

Repeat for Credit

N

Requisites

Prerequisite: ACCTG 231.

Typically Offered

Spring-Even Years

HM 650 - Senior Seminar in Hospitality Management

Credits 3

The application of critical thinking skills to explore hospitality management problems and perspectives. Decision-making tools will integrate marketing, human resources, diversity, ethics, leadership, team work, strategic management, and financial performance for foodservice, lodging, and event management.

Repeat for Credit

N

Requisites

Prerequisite: Senior Standing

Typically Offered

Spring

HM 662 - Foodservice Systems Management

Credits 3

A capstone course in foodservice management that focuses on the management, analysis, and evaluation of food and beverage systems. Emphasis on planning, coordinating, and improving commercial and noncommercial operations. Development of analytical and decision-making skills for solving managerial and operational problems.

Repeat for Credit

N

Requisites

Prerequisite: HM 351 and HM 375. Recommended Foundation Course: HM 422 and HM 475.

Typically Offered

Spring

HM 663 - Business Event Management

Credits 3

A capstone course in meeting and event management. This course will provide students with an opportunity to integrate knowledge, concepts and capacities from different parts of their learning experiences into realworld event planning experiences. This course will enable students to plan an event from initial conception to final evaluation.

Repeat for Credit

N

Requisites

Prerequisite: Senior Standing. Recommended Foundation Course: HM 475

Typically Offered

Fall

HM 664 - Advanced Hotel Operations

Credits 3

This senior-level course provides students the opportunity to utilize a strategic management process as a decision-making tool that integrates marketing, human resources, operations, and financial performance measures. This is a computer simulation class, where teams will compete with each other in real-time to understand and evaluate the market dynamics of a competitive set of hotels.

Repeat for Credit

N

Requisites

Prerequisite: HM 464, Senior Standing.

Typically Offered

Fall

HM 665 - Casino Management**Credits 3**

Investigation of the histories and overall operations of casino properties and their impacts on the foodservice and hospitality industry from the social, economical, political and environmental perspectives.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing, 60 credit hours or more.

Typically Offered

Fall

HM 705 - Information Technology Systems in Hospitality Operations**Credits 3**

Review of computer development in foodservice and hospitality operations; development of criteria for implementation of a computer system; analysis of foodservice and hospitality hardware and software.

Repeat for Credit

N

Requisites

Prerequisite: CIS 101; and HM 480 or HM 560 or MANGT 220.

Typically Offered

Other

HM 710 - Readings in Hospitality Administration**Credits 1-3**

Directed study of current literature in foodservice and hospitality management and related areas.

Repeat for Credit

Y

Requisites

Prerequisite: HM 480 or HM 560 or MANGT 220.

Typically Offered

Fall, Spring, Summer

HM 730 - Advanced Service Management**Credits 3**

Explores advanced service management strategies involved in optimizing the guest experience in service-intensive industries, with a focus on optimizing operations and driving operational efficiency.

Repeat for Credit

N

Typically Offered

Fall

HM 785 - Practicum in Hospitality Management**Credits 1-6**

Professional experiences in approved foodservice organization as a member of the management team under faculty supervision.

Repeat for Credit

Y

Requisites

Prerequisite or concurrent: HM 342; and HM 480 or HM 560 or MANGT 220.

Typically Offered
Fall, Spring, Summer

HM 800 - Topics in Hospitality Management

Credits 1-3

Presentation of timely, cutting-edge material pertinent to professional practice in hospitality management and dietetics.

Note
Consent of School

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

HM 805 - Advanced Foodservice Management

Credits 3

Production planning and controls in foodservice systems analysis in foodservice systems. Decision optimization and systems analysis in foodservice organizations. Consideration of various types of foodservice systems.

Repeat for Credit
Y

Requisites
Prerequisite: HM 662 and MANGT 220 or equivalent.

Typically Offered
Fall-Odd Years

HM 810 - Research Techniques in Hospitality Management

Credits 3

Survey and application of research methodology in foodservice and hospitality management.

Repeat for Credit
Y

Requisites

Prerequisite: STAT 702 or STAT 703.

Typically Offered
Spring

HM 815 - Advanced Lodging Management

Credits 3

This course provides an introduction to conceptual and empirical research in the lodging industry and academic discipline. The course will familiarize students with the historical streams of lodging-focused research and introduce them to the current methods, trends, theory, and application of research in the lodging industry.

Repeat for Credit
N

Requisites
Prerequisite: HM 664 or equivalent.

Typically Offered
Fall-Odd Years

HM 820 - Problems in Hospitality Management

Credits 1-18

Individual investigation of problems in foodservice and hospitality management. Conferences and reports at appointed hours.

Repeat for Credit
Y

Requisites
Prerequisite: HM 342; and HM 480 or HM 560 or MANGT 400.

Typically Offered
Fall, Spring, Summer

HM 825 - Advanced Meetings and Business Event Management

Credits 3

This three-hour seminar course will expose students to a variety of higher level event management concepts. By the end of the course, students will be able to complete

executive tasks, conduct effective event management research, incorporate findings into applicable strategic plans for the future, and disseminate knowledge to educators, industry, and executives.

Repeat for Credit

N

Requisites

Prerequisite: HM 663 or equivalent.

Typically Offered

Fall-Even Years

HM 835 - Survey of Research in Hospitality Management

Credits 3

Explores classic and contemporary research to introduce research topics and trends in the hospitality discipline. Underlying theories, research designs, and industry implications of both theoretical and empirical research will be analyzed and critiqued.

Repeat for Credit

N

Requisites

Prerequisite: Required for Master's students only

Typically Offered

Fall-Even Years

HM 885 - Seminar in Hospitality Administration

Credits 1

Discussions of research related to foodservice and hospitality management.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HM 890 - Administration of Hospitality Organizations

Credits 3

Advanced study of management applied to foodservice and hospitality organizations.

Repeat for Credit

Y

Requisites

Prerequisite: MANGT 220.

Typically Offered

Fall

HM 895 - Financial Management and Cost Controls for the Hospitality Industry

Credits 3

Overview of fundamental knowledge of financial management, managerial accounting and operational cost controls for the hospitality industry. Important topics include review of managerial accounting concepts based on the Uniform System of Accounts for the Lodging Industry, value and risk analyses, budgeting, asset management, expansion via franchising and management contracts, cost-volume-profit analyses, and operational applications for financial performance.

Repeat for Credit

Y

Requisites

Prerequisite: A basic financial or managerial accounting course

Typically Offered

Fall-Odd Years

HM 899 - Research in Hospitality Administration

Credits 1-18

Individual research which may form the basis for master's report or thesis.

Note

Consent of School

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

HM 905 - Advanced Hospitality Strategic Management

Credits 3

Through lecture, case and literature review and analysis, and projects; Advanced Hospitality Strategic Management introduces students to empirical research in hospitality strategic management and is designed to improve knowledge and abilities to analyze and apply different perspectives of strategic management in the hospitality industry. Topics include but are not limited to environmental scanning techniques, value chain analyses, strategies of choice in variety of business levels, implementation strategies, and maximizing effectiveness of strategic management.

Repeat for Credit
N

Requisites
Prerequisite: HM 895, Instructor consent required. Other Requirements: An undergraduate or master's level strategic management course is recommended.

Typically Offered
Spring-Even Years

HM 975 - Research and Applied Theories in Hospitality Management

Credits 3

Critique of theoretical constructs and research applications in the study in foodservice and hospitality management. Emphasis on preliminary stages of research development including preparation of literature reviews and preliminary proposals for research.

Repeat for Credit
Y

Typically Offered
Fall-Even Years

HM 980 - Higher Education in Hospitality Management

Credits 3

An in-depth study of the higher education system in hospitality administration and professional development that prepares for a successful scholar/educator in hospitality education.

Repeat for Credit
Y

Requisites
Prerequisite: EDCEP 927 and consent of instructor.

Typically Offered
Spring-Odd Years

HM 985 - Advances in Hospitality Management

Credits 3

Analysis of selected topics and research in foodservice and hospitality management.

Repeat for Credit
Y

Requisites
Prerequisite: HM 810 and consent of instructor.

Typically Offered
Other

HM 990 - Dissertation Proposal Seminar

Credits 1

Presentation and discussion of proposals for dissertation research.

Repeat for Credit
Y

Requisites
Prerequisite: Six hours of statistics, 3 hours of research design or methods, and consent of major professor.

Typically Offered
Fall, Spring, Summer

HM 993 - Teaching Practicum in Hospitality Management

Credits 3

This course is designed to serve as a culminating experience in which students apply the teaching and learning strategies learned in coursework through practice in the higher education classroom. In addition to teaching a subsection of a current course, weekly meetings will discuss relevant topics that affect instructors in the classroom environment.

Note

Consent of School

Repeat for Credit

N

Requisites

Prerequisite: EDCI 943

Typically Offered

Fall, Spring

HM 995 - Grantsmanship and Publication**Credits 3**

Grant writing, identifying external funding, managing grants, preparing manuscripts for peer-reviewed publication, and preparing papers and poster for presentation at professional meetings.

Note

Graduate level research methods class.

Repeat for Credit

Y

Typically Offered

Spring-Odd Years

HM 999 - Research in Hospitality Administration**Credits 1-18**

Research in hospitality management for the doctoral dissertation.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HNR 101 - Introduction to Horticulture and Natural Resources**Credits 1**

This course is an introduction to the Horticulture and Natural Resource department. It is designed to assist students in developing skills and an awareness of resources to promote a successful college experience and prepare them for future career opportunities within the HNR fields.

Repeat for Credit

N

Typically Offered

Fall, Spring

HNR 115 - Special Topics in Horticulture and Natural Resources**Credits 1-6**

Discussion and lectures on selected topic areas related to Horticulture and Natural Resources

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HNR 140 - Horticulture and Natural Resources Problems**Credits 0-3**

Problems and reports in horticulture, park management and conservation, or wildlife and outdoor enterprise management.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HNR 390 - Horticulture and Natural Resources Topics

Credits 1-18

Lectures and discussion of topics of importance to undergraduate majors in horticulture, park management and conservation, or wildlife and outdoor enterprise management.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HNR 440 - Advanced Horticulture and Natural Resources Problems**Credits 0-3**

Advanced problems and reports in horticulture, park management and conservation, or wildlife and outdoor enterprise management.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HNR 899 - Masters Research**Credits 1-18**

Investigations in horticulture, park management and conservation, or wildlife and outdoor enterprise management for preparation of master's thesis.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HNR 999 - PhD Research**Credits 1-18**

Investigations in horticulture, park management and

conservation, or wildlife and outdoor enterprise management. Data collected may form basis for a thesis or dissertation.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 190 - Preparing for Your Horticulture Career**Credits 1**

This course is designed to assist students in their personal and professional development. Specifically, students will gain an appreciation for the significance of the horticultural industry while acquiring various skills necessary for a rewarding internship experience and their future professional career. Students will also develop an understanding, awareness and empathy of human diversity as it relates to each individual and the world around them.

Note

One hour lecture per week.

Repeat for Credit

N

Typically Offered

Fall

HORT 201 - Principles of Horticultural Science**Credits 4**

The basic principles of plant science and the environment that apply to horticulture; survey of the industry; plant taxonomy, anatomy, morphology, and physiology; environment and plant growth; plant propagation, pest management, plant breeding.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

HORT 202 - Principles of Horticultural Science Lab**Credits 1**

The lab for basic principles of plant science and the environment that apply to horticulture; survey of the industry; plant taxonomy, anatomy, morphology, and physiology; environment and plant growth; plant propagation, pest management, plant breeding.

Note

Two hours lab a week

Repeat for Credit

N

Requisites

Corequisite: HORT 201

Typically Offered

Fall, Spring

HORT 210 - Concepts of Floral Design**Credits 3**

An introduction to the use of flowers and related products with emphasis on fundamentals of design.

Note

Two hours lecture and three hours lab a week. For majors or non-majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

HORT 256 - Human Dimensions of Horticulture**Credits 3**

Introduction to horticulture applied in schools, psychiatric and medical hospitals, corrections, vocational rehabilitation centers, elderly programs, and consumer horticulture settings. Networking the art and science of horticulture with architecture, business, social sciences, health care, horticulture, and education.

Note

Two hours lecture and one hour recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

HORT 274 - Landscape Plants I**Credits 3**

An introduction to landscape plant identification of trees, shrubs, and cultivated herbaceous plants, including perennials, annuals, biennials, and bulbs. Topics covered in the course include classification and nomenclature, plant growth characteristics and their landscape use. Weekly labs consist of lengthy walking campus tours to observe and identify plant specimens. A field trip may be required.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Prerequisite: BIOL 198 or HORT 201 or AGRON 120.

Typically Offered

Fall

HORT 275 - Horticultural Design I**Credits 3**

Introduction to the landscape design process including historical perspectives and contemporary issues; development of planning, graphical presentation, and communication skills; and application of design principles to horticultural garden design.

Note

Two hours lecture and two hours lab per week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

HORT 282 - Foundations of Horticultural Pest Management

Credits 1

Pesticide use and handling, horticultural pesticides and their characteristics, integrated pest management approaches, and pesticide applicator certification.

Note

One hour lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore Standing

Recommended prerequisite: HORT 201 and an entomology, plant pathology, or weed science course.

Typically Offered

Spring

HORT 300 - Plants and Society

Credits 3

Provides a perspective of horticulture plants and their importance in society and how they are intertwined with everyday activities. Fosters student well-being, highlighting and emphasizing the art and science of growing and using plants to enhance and improve one's environment, through hands-on learning opportunities, while engaging in the

plant world.

Repeat for Credit

N

Requisites

Prerequisite: Non-majors only.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Historical Perspectives

HORT 301 - Horticulture Practicum

Credits 1-3

Experiential approach to learning horticulture through teaching. Students will assist faculty with specific horticulture courses.

Note

No more than 3 credits may be used as horticulture specialization electives nor may it substitute for a required horticulture course in the horticulture or horticultural therapy curricula.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201, junior standing, and successful completion of practicum assistance course with at least a C.

Typically Offered

Fall, Spring

HORT 325 - Introduction to Organic Farming

Credits 2

This class will cover the history of organic farming principles, practices, and policies. USDA standards will be compared to similar standards in other countries, and to "green labels" that compete with organic products in the marketplace. Industry trends as well as the basics of how to certify farms and food processors will be included.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall-Even Years

K-State 8

Ethical Reasoning and Responsibility

HORT 350 - Plant Propagation**Credits 3**

Designed to develop proficiency in various skills and techniques necessary for propagation of horticultural plants. Basic fundamentals of seed structure and vegetative makeup of plants are emphasized.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201 or BIOL 198

Typically Offered

Spring

HORT 360 - Public Horticulture**Credits 3**

In-depth presentation and discussion of techniques and requirements for the management and administration of a public horticultural facility. Topics include oral and written presentation skills, proposal development, public relations, budgeting, fundraising, dealing with governing boards, interpersonal relationships and managing horticultural operations.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Spring

HORT 375 - Landscape Plants II**Credits 3**

Continued identification of cultivated landscape tree, shrubs, and herbaceous plants, including perennials, annuals, biennials, and bulbs. Topics covered in the course include classification and botanical nomenclature, plant growth characteristics and their landscape use.

Note

Weekly labs consist of lengthy walking campus tours to observe and identify plant specimens. A field trip may be required. Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 274.

Typically Offered

Spring-Even Years

HORT 377 - Interior Landscaping**Credits 3**

A study of the interior landscaping industry to include identification of plants used in interior environments; designing, installing and maintaining interiorscapes and green walls; and managing interior landscaping businesses.

Note

One three-hour lab and one two-hour lecture/studio a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201.

Typically Offered

Fall-Even Years

HORT 390 - Horticulture Topics**Credits 1-18**

Lectures and discussion of topics of importance to undergraduate majors.

Note

Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

HORT 391 - Independent Study in Floral Design

Credits 3

Independent, supervised study of a topic related to floral design.

Repeat for Credit
N

Typically Offered
Fall, Spring

HORT 405 - Water Issues in the Lawn and Landscape

Credits 3

This course will examine critical water issues related to irrigation in urbanizing watersheds, with an emphasis on water quality and quantity. Factors impacting water scarcity and quality will be discussed. Successful completion of this course will help students understand the interrelatedness of incorrect irrigation practices and water quality/quantity, and will equip them to help protect water resources through application of science based irrigation practices.

Note
This is a distance education course.

Repeat for Credit
N

Requisites
Recommended Foundation: Junior standing or one year of experience in the lawn/landscape maintenance industry.

Typically Offered
Spring

K-State 8
Global Issues and Perspectives
K-State 8 Tag 2
Natural and Physical Sciences

HORT 410 - Floral Planning for Special Events

Credits 1

Operation of a successful event planning floral business for weddings and other special occasions with a focus on the consultation and proposal plan.

Note
Two hours lecture and two hours lab a week for first 5 weeks of the semester.

Repeat for Credit
N

Requisites
Prerequisite: HORT 210

Typically Offered
Spring-Even Years

HORT 415 - Wedding Flowers

Credits 1

Creation of custom wedding designs such as bridal bouquets, corsages/boutonnieres, altar arrangements, and centerpieces based on parameters established during consultations and present trends.

Note
Two hours lecture and two hours lab a week, second five weeks of the semester.

Repeat for Credit
N

Requisites
Prerequisite: HORT 210.

Typically Offered
Spring-Even Years

HORT 420 - Unique Floral Designs

Credits 1

Application of advanced principles and techniques of floral design in the creation of unique arrangements utilizing standard and nonstandard supplies in an artistic way.

Note

Two hours lecture and two hours lab a week, last five weeks of the semester.

Repeat for Credit

N

Requisites

Prerequisite: HORT 210.

Typically Offered

Spring-Even Years

HORT 490 - Horticulture Internship

Credits 3-6

Principles of commercial or public horticulture activity including exposure to multiple phases of the working horticulture operation.

Note

Students will be placed according to specific interest. Required for horticulture majors after having completed 60 hours.

Repeat for Credit

Y

Requisites

Recommended Foundation Courses: HORT 190, HORT 201, plus one horticulture commodity course level 300 or above.

Typically Offered

Fall, Spring, Summer

HORT 495 - Undergraduate Research in Horticulture

Credits 0-3

Undergraduate students work with faculty mentors on projects involving various elements of research in horticultural science including identifying a problem, designing and conducting experiments, interpreting and communicating the research results. The completed project must be presented at a professional forum, and students are required to write a final project report on completion of their project.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 499 - The Horticultural Professional

Credits 0

Completion of horticulture program assessment tools. Completion of modules associated with professional development during careers in horticultural disciplines, including diversity and ethics in the workplace, job search skills, and providing leadership in the profession.

Repeat for Credit

N

Typically Offered

Fall, Spring

HORT 508 - Business of Sustainable Landscape Management

Credits 2

Understanding and implementing maintenance requirements for the care of young trees, shrubs and herbaceous plants that focus on practices that address environmental issues related to the management of residential and commercial landscapes. Students will learn how to analyze and apply landscape management practices while creating an attractive landscape in balance with the local climate that requires minimal resource inputs, such as human energy, fertilizers, pesticides and water.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 201

Typically Offered

Spring

HORT 510 - Horticultural Design II

Credits 3

Reinforcement of the horticultural design process as applied to the use of native and introduced plant materials.

Emphasis on functional and aesthetic arrangement of plants in small-scale design to meet site design objectives and adaptation to microclimates. Students expected to develop site adapted plant palettes and graphic ability to present their design.

Note

Two three hour studio periods a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 275 and two plant materials courses.

Typically Offered

Spring

HORT 515 - Basic Turfgrass Culture

Credits 3

Turfgrass identification and adaptation; establishment and maintenance of turf for golf courses, sports fields, home lawns, parks, and commercial/institutional grounds.

Note

Two hours recitation and two hours lab each week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 201 and AGRON 205.

Typically Offered

Spring

HORT 517 - Golf Course and Sports Turf Operations

Credits 3

Strategies involved in golf course and sports turf operation, including development of cultural practices, effective communication, personnel management, and budgeting.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 515.

Typically Offered

Fall

HORT 520 - Fruit Production

Credits 3

Principles and practices of cultivating fruit and nut crops commercially. Laboratory offers experiences in pomological practices.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201 or equivalent. Recommended Foundation Course: HORT 350.

Typically Offered

Spring-Odd Years

HORT 525 - Horticulture for Special Populations

Credits 3

An intensive study of the concepts and methods of using plants and gardening as therapeutic activities with developmentally disabled, geriatric, economically and socially disadvantaged, emotionally disturbed, or educationally deprived clients.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

HORT 530 - Horticultural Therapy Case Management

Credits 1

Guest lecturer and student presentations of topics relating to professionalism, current issues, or goals of horticultural therapy. The course is intended to help students focus expectations and assumptions about a professional career in horticultural therapy and to give them practice in articulating their understanding of the field. Client case management is used as part of career practice.

Note

One hour recitation a week.

Repeat for Credit

N

Typically Offered

Spring

HORT 535 - Horticultural Therapy Field Techniques

Credits 3

Students under supervision will plan, conduct, and evaluate horticultural therapy activities at Manhattan institutional sites selected according to student's interest. A weekly discussion session addresses evaluation and issues of professionalism.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 525.

Typically Offered

Fall

HORT 540 - Horticultural Therapy Field Experiences

Credits 3-6

Supervised training at institutions with horticultural therapy programs to gain experience in the application and use of horticultural activities for special populations. Six months

(1,000) hours continuous internships required in psychiatric and correctional programs.

Note

Two 3-month (500 hours) internships may be completed at different sites. Students are required to complete six credits of field experience before graduation.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 545 - Computer Applications in Horticultural Design

Credits 3

Introduction to a variety of computer software packages which students may encounter in the nursery/garden center environment. These include planning, routing, and estimating packages. Students must provide their own laptop computer.

Note

One hour recitation and four hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 510, or instructor permission.

Typically Offered

Fall

HORT 550 - Horticultural Irrigation Systems

Credits 3

Application of the principles and practices of horticultural irrigation which involve the various aspects of irrigation system installation, maintenance and scheduling, electrical troubleshooting, basic hydraulics, and drip irrigation as these topics pertain to residential and commercial landscapes, recreational turf areas, and greenhouse and field production systems.

Note

Two hour lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: MATH 100; HORT 201; and AGRON 205.

Typically Offered

Fall

HORT 551 - Landscape Contracting and Construction**Credits 2**

The study of contracts and specifications, and the bidding and estimating processes as applied to landscape contracting. The interpretation and implementation of small-scale landscape construction (hardscape) projects.

Note

1 hour lecture and 2 hours lab a week

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 275.

Typically Offered

Fall

HORT 552 - Horticultural Landscape Construction**Credits 1**

The interpretation and implementation of small-scale landscape construction (hardscape) projects.

Note

Three hours lab a week, for the last 11 weeks of the semester.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 275.

Typically Offered

Spring

HORT 560 - Vegetable Crop Production**Credits 3**

Study of production principles and cultural practices involved in the growing of vegetable crops.

Note

Two hours lecture and two hours lab or field trips a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201.

Typically Offered

Spring-Even Years

HORT 570 - Greenhouse Operations Management**Credits 3**

Greenhouse systems operations and management including greenhouse layout; structures; glazing materials; heating, ventilation, irrigation, lighting, benching, growing medium handling, and fertilization systems; traffic flow; crop handling, processing and shipping.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201.

Typically Offered

Fall

HORT 575 - Nursery Management**Credits 3**

A study of the various practices and methods of operating a commercial nursery for the production of woody ornamental plants for the landscape industry. Nursery layout, planting systems, nutrition management, plant maintenance and harvesting technologies will be discussed.

Note

Two hours recitation and three hours lab a week. Field trips may be required.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 350 and AGRON 205.

Typically Offered

Fall

HORT 580 - Advanced Horticultural Design**Credits 3**

Emphasis is on horticultural design projects with clients, working with the design process, design articulation and communication with the clients.

Repeat for Credit

N

Requisites

Prerequisite: HORT 510.

Typically Offered

Other

HORT 585 - Arboriculture**Credits 3**

Principles and practices of maintaining shade and ornamental trees under urban environments.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 201; and HORT 274 or FOR 330.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

HORT 587 - Turfgrass Diseases and Their Management**Credits 1**

Biology, diagnosis and integrated management of turfgrass diseases. Emphasis is on diseases of intensively maintained turfgrass.

Note

Two hours lecture and two hours lab a week, for the first five weeks of the semester.

Repeat for Credit

N

Requisites

Prerequisite: HORT 282

Typically Offered

Fall-Even Years

K-State 8

Natural and Physical Sciences

HORT 588 - Turfgrass Weeds and Their Management**Credits 1**

Biology, diagnosis and integrated management of turfgrass weeds.

Note

Two hours lecture and two hours lab a week, for the middle five weeks of the semester.

Repeat for Credit

N

Requisites

Corequisite or Prerequisite: HORT 282 and HORT 515

Typically Offered

Fall-Even Years

K-State 8

Natural and Physical Sciences

HORT 589 - Turfgrass Insects and Their Management**Credits 1**

Biology, diagnosis and integrated management of turfgrass insect pests.

Note

Two hours lecture and two hours lab a week, for the last five weeks of the semester.

Repeat for Credit

N

Requisites

Corequisite or Prerequisite: HORT 282 and HORT 515

Typically Offered

Fall-Even Years

K-State 8

Natural and Physical Sciences

HORT 591 - Small Farm Practicum**Credits 3**

Project-based practical experience in small-scale, diversified, agricultural production.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 520, or HORT 560 or HORT 570

Typically Offered

Fall, Spring, Summer

HORT 595 - Horticulture Study Abroad**Credits 3**

Seminar and travel course designed to prepare students before an international study abroad experience focused on horticulture. Upon completion of travel, students will analyze, critique, and report their experiences. Course will focus on appropriate oral and written documentation of the experience.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 600 - Herbaceous Landscape Plant Production**Credits 3**

The principles and commercial practices for producing annual and herbaceous perennial plants from seed and cuttings, including vegetable and herb crops in controlled environments. Analysis of crop production costs and plant growth regulation will be emphasized.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 350 and HORT 570.

Typically Offered

Spring

HORT 625 - Floral Crops Production and Handling**Credits 2**

The principles and commercial practices for producing floral potted crops and fresh flower crops, emphasizing the physical responses of plants to their environment. Aspects of postharvest physiology of fresh flowers will be covered.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 201. Recommended Foundation Courses: HORT 350, BIOL 500, and HORT 570.

Typically Offered

Spring-Odd Years

HORT 630 - General Viticulture**Credits 3**

Focus is on aspects of grapes, from vine anatomy to final products produced from them. Includes cultivars,

propagation, canopy management, diseases, weed control, physiology, anatomy, irrigation, wine production, climates and soils.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 520.

Typically Offered

Spring-Odd Years

HORT 640 - Horticultural Problems

Credits 0-3

Problems and reports in floriculture, olericulture, ornamental horticulture, pomology, turfgrass and horticultural therapy.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 650 - Agrarian Traditions: Literature Shaping Modern Food Movements

Credits 3

Examines the Agrarian literary and philosophical traditions to better understand the drivers of food and agriculture movements in the United States and globally. Studies Virgil, Sir Albert Howard, Aldo Leopold, and Wendell Berry, among others. Analyzes texts both within their historical contexts and as they apply to modern food movements.

Repeat for Credit

Y

Requisites

Prerequisite or Corequisite: ENGL 200 and Junior standing.

Typically Offered

Fall-Even Years

K-State 8

Historical Perspectives

HORT 695 - Introduction to Permaculture

Credits 3

Exploration of a thinking/design methodology that seeks to provide for the physical needs of humans, including food, water, shelter, energy, etc. while doing so in an environmentally-friendly, sustainable manner.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 201 and HORT 275.

Typically Offered

Fall-Odd Years

HORT 705 - Hydroponic Food Production

Credits 3

This hands-on course explores hydroponic growing methods both regionally and internationally, incorporating production of tomatoes, cucumbers, peppers, leafy greens, herbs, microgreens, and berries into a variety of production systems used in controlled environment agriculture. Topics will also include sustainability of the systems and an introduction to safe food handling practices.

Repeat for Credit

N

Requisites

Requisite: Junior standing or consent of Instructor.
Recommended Foundation Course: HORT 570.

Typically Offered

Spring-Even Years

HORT 706 - Advanced Culture of Golf and Sports Turf

Credits 3

Advanced topics in golf and sports turf maintenance

focusing on construction methods and management of abiotic and biotic stresses.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: HORT 515.

Typically Offered

Fall

HORT 710 - Plant Cell, Tissue and Organ Culture.

Credits 3

Course will cover the principles and laboratory exercises that demonstrate major concepts and practical techniques in plant cell, tissue and organ culture. The history and use of plant cell-, tissue-, and organ-culture for crop improvement will be explained. The variety of tissue-culture techniques will be highlighted. Selected readings and practical tissue culture projects will be required.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 350.

Typically Offered

Spring

HORT 715 - Advanced Interiorscaping

Credits 3

Focus is the physiological principles and industry practices in the production, moving, care, and maintenance of interior plants. This course will provide students the career tools to design, install and maintain interior landscapes through knowledge of interior plant physiology, care and maintenance.

Note

Two hours lecture and two hours lab a week

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 201 and BIOL 500.

Typically Offered

Spring-Even Years

HORT 720 - Environmental Nursery Production

Credits 3

Cultural practices used with nursery production will be presented with focus on the adoption of best management practices, conservation of resources, scientific research-based investigations related to nursery cultural practices, potential risks to nursery personnel, and off-site movement of air-borne materials and effluents to surrounding areas and public watersheds.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 575.

Typically Offered

Spring-Odd Years

HORT 725 - Postharvest Technology and Physiology of Horticultural Crops

Credits 3

A study of the principles and practices involved in the harvesting, handling and storage of horticultural products. The relationship of plant structure and physiology will be emphasized in discussing effects of postharvest handling and storage to maximize quality and shelf life of products.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered
Spring-Odd Years

HORT 751 - Human Issues in Horticultural Therapy

Credits 3

This course will explore human issues in horticulture generally, and human issues in horticultural therapy specifically. Consideration of selected topics and issues such as people/plant relationship theories, horticultural therapy as a specialized allied health field, health-care gardens and their use, societal impacts on horticultural therapy, and research issues. Provides students with a knowledge and understanding of the literature in horticultural therapy and develops an appreciation of the interrelationships involved in this multidisciplinary area.

Repeat for Credit
N

Requisites
Recommended Foundation Course: A course in research methods and a course in statistics.

Typically Offered
Fall

HORT 752 - Horticulture in Horticultural Therapy

Credits 3

Application of horticulture principles and practices in therapeutic settings; considerations for greenhouse systems operations and management in therapeutic settings; landscape maintenance, fruit and vegetable gardening, and production horticulture as part of a therapeutic program; and plant propagation for production and therapy.

Repeat for Credit
N

Typically Offered
Spring

HORT 753 - Clinical Skills in Horticulture Therapy

Credits 3

Development of horticultural therapy skills and methodology is facilitated through real-life case studies. Includes instruction, practice, and evaluation of clinical skills with population groups typically served through horticultural therapy.

Repeat for Credit
N

Typically Offered
Fall

HORT 755 - Practicum in Horticultural Therapy

Credits 3

The practicum is a means of demonstrating the interconnections between 'theory' and 'practice'. By conducting a practicum project, students demonstrate the ability to apply concepts and ideas from their study of horticultural therapy to a specific population or setting.

Repeat for Credit
N

Typically Offered
Fall, Spring

HORT 760 - Business Management for Horticultural Enterprises

Credits 3

Focus is on developing a detailed business plan for the service, design and production businesses in horticulture that incorporates considerations of start-up capitalization, insurance, investments, legal accounting and employee compensation. Strategic decision-making and aspects of a horticulture firms that are unique to its industries, such as product seasonality and perishability, will be discussed.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Recommended Foundation Course: HORT 500-level or above.

Typically Offered

Fall

HORT 775 - Plant Breeding Methods in Horticulture**Credits 3**

Focus is on introductory plant breeding principles with emphasis on traditional methods of developing improved cultivars of cross-pollinated, self-pollinated, and asexually-propagated horticultural crops, and the genetic principles on which breeding methods are based. The course provides a general background in all areas of plant breeding as a foundation for mastering more complex breeding principles.

Note

Three hours lecture a week

Repeat for Credit

N

Requisites

Recommended Foundation Courses: ASI 500 and STAT 300-level or above.

Typically Offered

Fall-Even Years

HORT 780 - Health-Promoting Phytochemicals: Fruits and Vegetables**Credits 2**

The course deals with various aspects of phytochemicals in plant-based foods including fruits and vegetables and their impact on human health and well-being. It includes potential effects of phytochemicals in promoting human health, preventing various diseases and fostering wellness. It also includes biosynthesis and metabolism of phytochemicals in plants. Emphasis is placed on developing strategies to improve the phytochemical content of food crops through approaches involving crop management, environmental and biotechnology tools. Two hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and CHM 110 or CHM 210.

Typically Offered

Fall-Odd Years

HORT 790 - Sustainable Agriculture**Credits 2**

Historical perspectives of the sustainable agriculture movement in the U.S. and world-wide will be examined and critiqued. Components of sustainable agriculture such as agroecosystem theory, permaculture, energy use efficiency, and organic standards will be compared and evaluated. Students will demonstrate their understanding and application of the material by conducting research on a topic within sustainable agriculture and presenting the topic to the rest of the class.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall-Odd Years

HORT 791 - Urban Agriculture**Credits 2**

Students will become familiar with a wide variety of urban agriculture types and production systems utilized in urban settings. The course will include background readings, case studies, guest speakers, student-facilitated class discussion and lectures.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

Crosslisted

UFS 791

HORT 792 - Urban Food Production Practicum**Credits 1**

Students will complete a practicum in an approved urban agriculture setting to gain exposure to a broad range of tasks facing the urban farmer. This includes planning, production and marketing of crops in high tunnels and open field.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: HORT 520 and HORT 560.

Typically Offered

Fall, Spring, Summer

HORT 793 - Farm to Fork Produce Safety

Credits 2

This course will cover all aspects of food safety for fresh produce grown in urban and rural environments, including pathogen ecology and production aspects as well as pre-harvest and postharvest factors that influence the risk of microbial contamination. More specifically, we will discuss ways to minimize the risk of human pathogens on fresh produce using strategies such as the implementation of Good Agricultural Practices (GAPs) and Good Handling Practices (GHPs). The course will cover postharvest interventions that are currently used (chemical sanitizers) as well as innovative technology applications like physical treatments, irradiation, and biological control techniques. Additionally, students will explore the impact of foodborne outbreaks on public health and the fresh produce industry in terms of economics, consumer acceptance, and legal aspects.

Repeat for Credit

N

Requisites

Recommended Foundation Course: A course in microbiology.

Typically Offered

Fall-Even Years

HORT 794 - Urban Food Systems

Credits 2

This course will cover all components of urban food systems through the lens of food security, food justice,

access, policy, and community planning. Students will gain skills in grant-writing, non-profit planning and management, and working with urban policy and planning boards.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

HORT/UFS 794

HORT 795 - Urban Agriculture Study Tour

Credits 1

Faculty-led trip for students to explore leading examples of urban agriculture. Each year, a trip will occur within North America, lasting approximately 7 days. The study tours will focus on urban food system development in major cities and will highlight examples of how food is being grown in urban areas and the impacts that it has on the community.

Note

Instructor permission

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

HORT 796 - Professional Development in Urban Food Systems

Credits 0-1

A team instructed seminar course that provides urban food systems students with a suite of skills complimentary to their research experience but still necessary for professional career success. Urban Food System students will be expected to enroll in this course 4 semesters.

Repeat for Credit

Y

Typically Offered

Fall, Spring

Crosslisted

HORT 796

HORT 800 - Horticultural Physiology

Credits 3

Discussions of recent advances in horticultural crop plant physiology, including improvements in horticultural crops resulting from applications of molecular biology and biotechnology.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall

HORT 815 - Plant Nutrition and Nutrient Management

Credits 3

Focuses on the macro and micronutrient elements and their function in the growth and development of plants. Emphasis will be placed on the roles of single elements, interactions/balances between elements, and nutrient deficiency/toxicity symptoms as they affect the physiology of the whole plant and management of nutrient applications. The relationships between crop nutrition and production and environmental considerations (yield, drought, temperature, pests) will be explored.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: AGRON 205 and BIOL 500.

Typically Offered

Spring-Even Years

HORT 846 - Plant Research Methods

Credits 3

Review of history and forms of plant science literature. Discussion on selecting experimental procedures, interpreting data, and reporting results.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: One statistics course or consent of instructor.

Typically Offered

Fall

HORT 880 - Topics in Horticulture

Credits 0-18

Discussion and lectures of important papers and contributions in this field.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 898 - Master's Report

Credits 1-18

Investigations in pomology, olericulture, floriculture, ornamental horticulture, turfgrass, or horticultural therapy for preparation of master's report.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 899 - Research-MS

Credits 1-18

Investigations in pomology, olericulture, floriculture, ornamental horticulture, turfgrass, or horticultural therapy for preparation of master's thesis.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 910 - Advances in Plant Cell Culture**Credits 2**

Course will cover current topics in plant cell culture, applications and commercial practices, with emphasis on plant genetic improvement. Research-level skills in this area will be taught.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: HORT 710.

Typically Offered

Spring-Odd Years

HORT 940 - Plant Regulators in Horticulture**Credits 3**

A study of synthetic plant regulators used to initiate, induce, promote, inhibit, or alter characteristics of horticultural plants and crops. Included are kinds and types of exogenous plant regulators used on crops, their activity, plant responses, benefits and problems, and application technology.

Note

One hour lecture and two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 510 or BIOL 500, and one graduate plant commodity course.

Typically Offered

Fall-Even Years

HORT 951 - Horticulture Graduate Seminar**Credits 1**

Student presentations and discussion of investigational works in the various disciplines of Horticulture and Natural Resources.

Repeat for Credit

Y

Typically Offered

Fall, Spring

HORT 960 - Environmental Plant Stress**Credits 3**

Physiological, biochemical and morphological factors involved in stress development and resistance will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: HORT 800

Typically Offered

Spring

HORT 970 - Topics in Horticultural Therapy**Credits 0-18**

Discussion and lectures on important papers and contributions in horticultural therapy.

Note

Permission of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

HORT 999 - Research in Horticulture, PhD

Credits 1-18

Investigations in pomology, olericulture, floriculture, ornamental horticulture, and turfgrass. Data collected may form basis for a thesis or dissertation.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IAID 290 - Design and Material Culture**Credits 3**

This course examines contemporary topics within material culture and design across the three domains of practice and scales: Interior Architecture, Furniture Design, and Industrial Design. It serves as an introduction to the disciplinary topics that are shaping current and future design practice. The course begins with a chronological survey of design movements and their grounding theories which serves to frame a deeper thematic discussion around the three major course topics: environmental sustainability, health, and equity.

Repeat for Credit

N

Typically Offered

Fall, Spring

IAID 299 - History of Furniture**Credits 3**

Exploration of furniture history from prehistory to the present. Focus on socio-cultural, architectural, technological, material culture, manufacturing, spiritual, aesthetic, sustainable factors over the human timeline.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

IAID 407 - Design Workshop I**Credits 4**

An introduction to the principles of furniture design, with special emphasis on material properties, fabrication methods, tectonics, and structural considerations of furniture design. The course also serves as an introduction to best-practice techniques for safely using the tools and equipment within the Fabrication Lab. Through a series of initial exercises students will develop a versatile foundation in woodworking and metalworking skills that will be applied to the design and fabrication of small-scale furniture projects.

Repeat for Credit

N

Requisites

Prerequisite: IAID 290

Typically Offered

Fall, Spring, Summer

IAID 430 - Visual Communication I**Credits 3**

Seeks to provide a basic understanding of design visualization and presentation in both traditional and digital applications. A two and three-dimensional sensitivity is developed through a series of projects and lectures utilizing the principles of proportion, scale, hierarchy, balance, movement, line, plane, volume, texture, color and an introduction of vector and raster graphics software.

Repeat for Credit

N

Requisites

Prerequisite: ENVD 202.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

IAID 431 - Visual Communication II

Credits 3

Provides an advanced understanding of design visualization and presentation. Introduces a variety of 3D modeling and rendering software commonly used in the Industrial and Product Design field. Explores digital form development, materials representation, perceptual education and visual communication.

Repeat for Credit

N

Requisites

Prerequisite: IAID 430

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

IAID 432 - Visual Communication III**Credits 3**

Explores advanced techniques in design visualization and presentation. Advanced techniques in image generation and editing using raster and vector tools. Advanced topics in layout and typesetting. Introduction to time-based media, including audio and video editing and 2D animation. Introduction to web and interaction design.

Repeat for Credit

N

Requisites

Prerequisite: IAID 431

Typically Offered

Fall, Spring, Summer

IAID 456 - Introduction to Design**Credits 2**

Introduction to the Profession of Product/Industrial Design including history; major movements; key practitioners; socio-cultural, architectural and technological drivers; unique design/make processes and methodologies; materials and manufacturing techniques; and, contemporary issues.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

IAID 602 - Furniture Design II**Credits 4**

This course continues to enhance and increase the understanding of a human-centered approach to the design and prototyping of furniture, while focusing more deeply on function and context. Students will develop and practice intermediate woodworking and metalworking techniques and skills. The topics of the course may also include contextual and functional analysis for furniture design, sustainable practices, intermediate structural considerations, and an introduction to human factors as they relate to the design of furniture and accessories.

Repeat for Credit

N

Requisites

Prerequisite: IAID 407 and no grade lower than a C in any IARC or INDD studio course.

Typically Offered

Fall, Spring, Summer

IAID 605 - Problems in IAID**Credits 1-18**

Study of specific problems related to Interior Architecture, Industrial Design, or Furniture Design.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IAID 615 - Topics in Furniture Design**Credits 1-3**

Study of specific furniture design topics.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

IAID 680 - Production Furniture for the Contract Market Research

Credits 1

Introduction and implementation of market research; client end-user research; manufacturing implications; BIFMA and other testing requirements; and, competitive market analysis and implications to develop a complete "design brief" for a line of contract furniture within a major manufacturer's existing line.

Repeat for Credit
N

Typically Offered
Fall

IAID 681 - Production Furniture for the Contract Market Design

Credits 2

This course builds upon the knowledge gained and the design brief developed in IARC 680, Production Furniture for the Contract Market Research and develops the designers' understanding of intersecting forces affecting the design of a line of furniture, from conception to final production. Students work in teams with a manufacturer in the design and development of a line/family of products-expectations of design, prototyping, royalties and licensing-as well as the manufacturing processes and knowledge of effectively specifying furnishings.

Repeat for Credit
N

Requisites
Prerequisite: IAID 680.

Typically Offered
Spring

IAID 753 - Professional Practice: Professional Responsibility

Credits 1

Interdisciplinary course addresses the connections between

allied design professions and the larger community. It helps students to understand and appreciate their professional legal and ethical responsibilities.

Repeat for Credit
N

Typically Offered
Fall, Spring

IAID 754 - Professional Practice: Office Practices

Credits 1

Interdisciplinary course addresses practice-based issues concerning professional relationships in the design and delivery process, management of projects, communication practices, and fiscal concerns.

Repeat for Credit
N

Typically Offered
Fall, Spring

IAID 814 - Furniture Design III

Credits 4

Advanced exploration of contemporary topics in furniture design. Students explore innovative design solutions through an iterative, inclusive, and human-centered design process. There is a special emphasis on the generation of multiple mock-ups and prototypes to explore and test their design solutions.

Repeat for Credit
Y

Requisites
Prerequisite: IAID 602 and no grade lower than a C in any IARC or INDD studio course.

Typically Offered
Fall, Spring, Summer

IAID 824 - Advanced Furniture Design Studio

Credits 6

Advanced design, construction, and finishing of contemporary furniture. Students explore projects

programmed under the previous semester's Advanced Studio Programming. Projects must be relevant in a contemporary socio-cultural, architectural and technological context; employ rigorous design research processes and methodologies; identify user and usability needs/ desires; accommodate market opportunities and constraints; explore multiple conceptual solutions in a variety of hand and digital media; and demonstrate experimentation in the design of spatial components utilizing advanced construction techniques and materials through the development and documentation of models and prototypes. A book, oral and visual presentation and display materials for exhibition of the student's work will be required at the completion of the course.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 810 or INDD 810, IARC 815 or INDD 815.

Typically Offered

Fall, Spring, Summer

IAID 891 - Contemporary Design Seminar

Credits 3

Seminar on current interior architecture, product design and furniture design that illustrate principles and practical concerns that motivate design with readings, class discussion, student presentations, research papers or projects.

Note

Open to non-majors accepted in the College of Architecture, Planning and Design.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

IAPD 821 - Advanced IAPD Design Studio

Credits 4

Advanced study of interior space planning, product design,

and interior design.

Repeat for Credit

Y

Typically Offered

Spring, Summer

IARC 248 - Fundamentals of Architectural Technology

Credits 3

Instruction in the fundamentals of architectural technology with emphasis on the concepts and principles necessary for developing an integrated approach to building design.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Admission to a professional program in the college.

Typically Offered

Fall

Crosslisted

ARCH 248: Fundamentals of Architectural Technology

IARC 300 - Design and Material Culture

Credits 3

People's personal characteristics or social position can be expressed by the products they purchase, the possessions they own, and the physical environments they create. Design has become a major factor influencing one's final decision for purchasing these products. This course examines material culture which is created from the influences of human behavior, design, history, marketing, economics, politics, geography, the arts, and sociology.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

IARC 307 - IARC Design Studio I

Credits 5

Introduction to the Interior Architecture design process. Generation of design concept and design alternatives for small-scale projects. Introduction to basic design theory, beginning design research, human scale, behavior, ergonomics and anthropometrics as they affect design decisions. Introduction of structure and environmental analysis as informants and determinants of design. Focus on multiple graphic representations and compositions, including diagramming, sketching, freehand drawing, and enhancing through digital means.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the professional program in interior architecture.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

IARC 310 - IARC Digital Applications

Credits 2

This course addresses current digital media as it is used by the profession to draft and visualize design projects. Survey a wide variety of contemporary design and visualization software. The intention is not mastery of any single software but instead to form an understanding of the interface and use of the tools and when they are appropriate. Enable the thoughtful discussion and understanding of design representation and process in both drafting and visualization. Enable and empower the student to comfortably engage design software as they continue to evolve.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the professional program in

interior architecture.

Typically Offered

Fall, Summer

K-State 8

Aesthetic Interpretation

IARC 320 - IARC Design Studio II

Credits 5

This studio introduces the principles of design, design terminology, and the values of a human centered design philosophy for the interior environment. Significant emphasis will be on the theoretical underpinnings of project ideation and development; and formal design processes and decision-making. Oral, graphic and visual communication skills and model making techniques will also be stressed to assist students in representing their design ideas.

Repeat for Credit

N

Requisites

Prerequisite: IARC 307; no grade lower than a C in any interior architecture and product design studio course.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

IARC 391 - Topics in Contemporary Design Seminar

Credits 3

Seminar on current interior architecture, industrial design, and furniture design that illustrate principles and practical concerns that motivate design with readings, class discussion, student presentations, research papers or projects.

Repeat for Credit

N

Requisites

Prerequisite: Open to non-majors accepted in the College of Architecture, Planning and Design; third-year standing.

Typically Offered
Fall, Spring

IARC 406 - Problems in IARC

Credits 1-18

Study of specific interior architectural problems under direct supervision of a member of the department.

Repeat for Credit
Y

Requisites
Prerequisite: ENVD 201.

Typically Offered
Fall, Spring, Summer

IARC 409 - Materials and Finishes

Credits 3

Introduction to materials, textiles, and finishes specific to interior applications. Criteria for evaluation, selection, and application of interior materials and finishes with the building fabric and their impact on building design. Preparation of written and graphic communications to illustrate and direct the construction process.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: Admission to the professional program in interior architecture.

Typically Offered
Fall, Spring, Summer

IARC 412 - Design Workshop I Studio

Credits 1

Exploration of design alternatives; process, presentation and construction graphics communicating design.

Repeat for Credit
N

Requisites
Corequisite: IARC 407.

Typically Offered
Fall, Spring, Summer

IARC 435 - IARC Design Studio III

Credits 5

This studio builds on the knowledge and skills developed in IARC 320. It provides an in-depth understanding of the design methodologies and principles of interior architecture enhanced with an introduction to evidence-based design through the principles of environment-behavior, review and analysis of historic precedents, user needs, and the impact of shapes and forms, materials, lighting and color.

Repeat for Credit
N

Requisites
Prerequisite: IARC 320, no grade lower than a C in any interior architecture studio course.

Typically Offered
Fall, Spring, Summer

IARC 440 - IARC Design Studio IV

Credits 5

This course will build upon and extend the knowledge and skill base gained by students in previous studios, and will include the introduction of programming methodology and its relationship to the design and organization of interior space. Emphasis will be placed on an understanding of how human behavior affects the designed environment, including the elements and objects that shape it such as the appropriate selection of furniture, finishes, fixtures, and equipment within the context of their relationships to form, function, task and users' needs.

Repeat for Credit
N

Requisites
Prerequisite: IARC 435, no grade lower than a C in any interior architecture and industrial design studio course.

Typically Offered
Fall, Spring, Summer

IARC 603 - Design Workshop II Studio

Credits 1

Studio component of Design Workshop II. Exploration of design alternatives; process, presentation and construction graphics, students increase their proficiency at communicating ideas through working and presentation drawings for projects to be created in IARC 802: Design Workshop II.

Repeat for Credit

N

Requisites

Prerequisite: IARC 407, IARC 412 and no grade lower than a C in any IAPD or INDD studio course.

Corequisite: IARC 602.

Typically Offered

Fall, Spring, Summer

IARC 605 - Problems in IARC

Credits 1-18

Study of specific problems related to Interior Architecture.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

IARC 606 - IARC Design Studio VI

Credits 5

This semester of study provides an option for an interdisciplinary collaborative studio course oriented towards replicating the learning experience and interactive activities that takes place in the modern multidisciplinary professional office or a validated equivalent studio completed in an approved study program.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 433 and IARC 801, and no grade

lower than a C in any interior architecture design studio course.

Typically Offered

Spring

IARC 625 - Lighting

Credits 3

An examination of design and technical issues related to luminous environments in building interiors. Topics include color and light, vision, light sources, luminaire selection and design, and the evaluation of lighting solutions.

Repeat for Credit

N

Requisites

Prerequisite: IARC 435

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

IARC 628 - Construction Documentation

Credits 3

A technical capstone course that explores the development of construction documentation for interior architecture projects includes demolition, partition, and reflected ceiling plans, power & communications plans, finish and furnishings plans, interior elevations, sections, details and schedules. Understanding of the mechanical, electrical, plumbing and structural systems, as well as building and life-safety codes, and the Americans with Disabilities Act will be demonstrated through completion of the set of drawings.

Repeat for Credit

N

Requisites

Prerequisite: IARC 435.

Typically Offered

Fall, Spring, Summer

IARC 644 - Internship

Credits 9

Fifteen week internship in a professional environment with a focus on interior architecture, product/industrial design and/or furniture design: office and field experience.

Repeat for Credit

N

Requisites

Prerequisite: IARC 440; Corequisite: IARC 645.

Typically Offered

Fall, Spring

IARC 645 - Internship Report**Credits 5**

Development of the student's analysis, observation and communication skills in relationship to the professional office and field environment. Detailed documentation, online and on-campus, of the experiences encountered during internship, allowing classmates to learn from their peer's varied experiences as well as provide a detailed documentation of the student's work during internship.

Repeat for Credit

N

Requisites

Corequisite: IARC 644.

Typically Offered

Fall, Spring

IARC 664 - Summer Internship**Credits 6**

Ten week internship in a professional environment with a focus on interior architecture, industrial/product design and/or furniture design: office and field experience.

Repeat for Credit

N

Requisites

Prerequisite: IARC 440 and IARC 628 and no grade lower than a C in any IARC or INDD studio course.

Corequisite: IARC 665.

Typically Offered

Summer

IARC 665 - Summer Internship Report**Credits 1**

Development of the student's analysis, observation and communication skills in relationship to the professional office and field environment. Detailed documentation, online and on-campus, of the experiences encountered during internship, allowing classmates to learn from their peer's varied experiences as well as provide a detailed documentation of the student's work during internship.

Repeat for Credit

N

Requisites

Corequisite: IARC 664.

Typically Offered

Summer

IARC 710 - Advanced 3-D Computer Modeling**Credits 3**

Lighting, materials, animation, advanced modeling techniques, sound, and storyboarding are methodologies required to successfully build a digital presentation for projection in a two dimensional, or 3-dimensional environment using the vision domes. Projects that utilize these topics will include an introduction to 3D modeling, animation, sound, titling, lighting, and a material editor.

Repeat for Credit

N

Requisites

Prerequisite: IARC 410.

Typically Offered

Fall

IARC 755 - Professional Practice: Discipline-Specific Topics**Credits 1**

Covers discipline-specific concerns, focusing on issues

specific to architecture, interior architecture and product design, landscape architecture or regional and community planning.

Repeat for Credit

N

Typically Offered

Fall, Spring

IARC 760 - IARC Seminar

Credits 0-18

Readings and discussion of contemporary thought and movements within the field of interior architecture and product design with special emphasis on the societal factors that produce and effect change.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring

IARC 801 - IARC Design Studio V

Credits 5

This semester of study provides an option for an interdisciplinary collaborative studio course oriented towards replicating the learning experience and interactive activities that take place in the modern multi-disciplinary professional office.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 440 and no grade lower than a C in any IARC studio course.

Typically Offered

Fall, Spring, Summer

IARC 802 - Design Workshop II

Credits 3

Design Workshop II is intended to further develop the

student's understanding of the three dimensional design process through research, design, prototype construction, evaluation and redesign. Enhance and increase the student's understanding of the structural characteristics of materials.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 407, IARC 412 and no grade lower than a C in any IARC or INDD studio course.

Corequisite: IARC 803.

Typically Offered

Fall, Spring, Summer

IARC 803 - Design Workshop II Studio

Credits 1

Studio component of Design Workshop II. Exploration of design alternatives, process, presentation and construction graphics, students increase their proficiency at communicating ideas through working and presentation drawings for projects to be created in IARC 802: Design Workshop II.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 407, IARC 412 and no grade lower than a C in any IARC or INDD studio course.

Corequisite: IARC 802.

Typically Offered

Fall, Spring, Summer

IARC 810 - IARC Capstone Studio

Credits 5-6

Students are to pursue design projects that encompass their previous educational experience validating their knowledge of the IARC program studies. The project will be based on extensive research and review. The project presentation will suggest unique and applicable solutions with clearly identified methodology of implementation.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 801 and IARC 811.

Typically Offered

Fall

IARC 811 - Design Research

Credits 2-3

Identify evaluation criteria appropriate for design research and problem solving, analysis of literature, construction of problem statements, development and documentation of design problem proposals and reports.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 440.

Typically Offered

Fall, Spring, Summer

IARC 813 - Furniture Design Workshop Studio

Credits 1

Studio component of IARC 814 Furniture Design Workshop. Exploration of contemporary design alternatives, students explore innovation and demonstrate knowledge through design processes and including process, presentation and construction graphics for projects to be created in IARC 814: Furniture Design Workshop.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 603. Corequisite: IARC 814.

Typically Offered

Fall, Spring, Summer

IARC 815 - Advanced Studio Programming

Credits 2-3

Research of programming methodologies culminating in a programmatic document used as the basis for the design project in IARC 822, IARC 823 or IARC 824.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 801.

Typically Offered

Fall, Summer

IARC 822 - Advanced Product Design Studio

Credits 6

Students explore projects programmed under the previous semester IARC 815 Advanced Studio Programming. Projects must be relevant in a contemporary socio-cultural, architectural and technological context; employ rigorous design research processes and methodologies; identify user and usability needs/desires; accommodate market opportunities and constraints; explore multiple conceptual solutions in a variety of hand and digital media; build and document models and prototypes; and estimate material and manufacturing costs. A book, oral and visual presentation, and display materials for exhibition of the student's work will be required at the completion of the course.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 810 and IARC 815.

Typically Offered

Fall, Spring, Summer

IARC 823 - Advanced Interior Architecture Design Studio

Credits 6

Students explore projects programmed under the previous semester IAPD 815 Advanced Studio Programming. Projects focus on interior architecture represent a suitable design relevancy and proper academic rigor on the level of graduate design study. Design solutions must be relevant in a contemporary socio-cultural and architectural context; employ rigorous design research processes and methodologies; respond to user needs and desires; explore multiple innovative conceptual solutions in a variety of hand and digital media; and illustrate advanced knowledge and application of materiality, understanding of structural and building environmental systems' implication on interior architecture, and the selection or design of furnishings that

enhance the goals for the spaces.

Repeat for Credit

Y

Requisites

Prerequisite: IARC 810 and IARC 815.

Typically Offered

Fall, Spring, Summer

IARC 830 - Problems in IARC

Credits 0-18

Study of specific interior architectural problems under direct supervision of the departmental staff.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring

IDFS 350 - Our Sustainable World

Credits 3

Sustainability has become one of the most pressing scientific and social challenges of the modern era. This course introduces students to the theory, principles, and practices of sustainability - by focusing on environmental, social, and economic sustainability perspectives, behaviors, policies, and customs on a global level. It includes discussions on creating ecological health, economic welfare, and social justice.

Repeat for Credit

N

Typically Offered

Spring, Summer

Crosslisted

ID 350

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

IDFS 650 - Resilient Systems for a Sustainable World

Credits 3

Study of resilience in environmental, economic, and social systems to foster human wellbeing from a human ecology perspective. Examines theories and approaches that create resilient systems resulting in ecological health, economic welfare, and social justice.

Repeat for Credit

N

Requisites

Prerequisite: IDFS 350 OR GEOG 360 OR FASH 700

Typically Offered

Fall, Spring

IDFS 670 - Problem Solving for a Sustainable World

Credits 3

Study of problem solving approaches with application to personal action, social systems, and the ecology of the planet from a human ecology perspective. The course will emphasize developing solutions to problems through the application of problem solving methods and thinking skills. Systems thinking, design thinking, critical thinking, and creative thinking will be employed as means to solve challenges to human wellbeing.

Repeat for Credit

N

Requisites

Prerequisite: IDFS 350 OR GEOG 360 OR FASH 700

Typically Offered

Fall, Spring

IDFS 750 - Leading Change for a Sustainable World

Credits 3

Study of skills, techniques, and methods of leading groups to overcome challenges to human wellbeing associated with the climate crisis from a human ecology perspective. Students in the course will learn and apply effective leadership approaches and processes and develop

individual skills of effective change leadership.

Repeat for Credit

N

Requisites

Prerequisite: IDFS 650 and IDFS 670

Typically Offered

Fall, Spring

IDSN 115 - First Year ID Student Seminar

Credits 1

First Year Seminar is structured to engage and support students during their first semester of study. The course is focused on learning strategies and resources that build toward successful outcomes for the remainder of their college studies.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the Interior Design Program.

Typically Offered

Fall

IDSN 210 - Design and Behavior in the Interior Environment

Credits 3

Developing awareness of aesthetic and behavioral relationships fundamental to interior design.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

IDSN 225 - Interior Design Studio 1

Credits 4

Introduction to two-dimensional and three-dimensional design fundamentals including design elements and

principles, the design process, interior design theory and its application, and fundamental design communication methods including drawing and model building.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the interior design program.

Typically Offered

Fall

IDSN 245 - Interior Design Studio 2

Credits 4

Exploration of two-dimensional and three-dimensional design fundamentals. Introduction to color theory in spatial design. Introduction to light, shade, and shadow. Introduction to rendering, constructed perspective, and paraline drawing.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 225 with a C or better.

Typically Offered

Spring

IDSN 300 - Global Experiences in Interior Design

Credits 0-6

An experiential learning course that prepares students for and immerses them in an international study tour designed to enhance their global and cultural awareness. Lectures and tours target important interior/architectural design, furniture, and objects of material culture.

Note

Instructor's permission.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IDSN 310 - Construction Methods and Materials for Interior Design

Credits 4

Introduction to theories, concepts, selection, and application of construction processes, materials, and finishes. Introduction to codes, regulations, representation of construction methods, and sustainability.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 245 and IDSN 350 with C or better.

Typically Offered

Fall

IDSN 315 - Digital Visualization I

Credits 2

Introduction to and application of digital technologies used by interior design professionals for 2D drafting and presentation layout.

Repeat for Credit

N

Requisites

Corequisite: IDSN 325

Typically Offered

Fall

IDSN 320 - History of Interior Design I

Credits 3

A historic survey of all aspects of the built environment, including architecture, furniture, textiles, and the minor arts from antiquity to 1850.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

IDSN 325 - Interior Design Studio 3

Credits 4

Advanced spatial design fundamentals. Application of human factors and theories of human behavior in the built environment. Selection of materials and colors. Emphasis on design conceptualization and creativity. Advanced visual communication methods including perspective drawing and rendering and other rapid visualization skills.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 245 with a C or better

Corequisite: IDSN 315

Typically Offered

Fall

IDSN 330 - Textiles for Interior Design

Credits 3

Introduction to textiles for interior environments, with a focus on the fabrication and application of materials designed specifically for use as upholstery, window coverings, soft floor coverings, wall coverings, panel systems, and other miscellaneous interior applications. Also includes the regulatory, environmental, and human health impacts of textile production, application, and maintenance.

Repeat for Credit

N

Typically Offered

Spring

IDSN 345 - Interior Design Studio 4

Credits 4

Application of interior design theory and evidence-based design in small scale projects. Introduction of project programming for interior design. Application of codes and regulations. Continued emphasis on design communication skills.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 310 and IDSN 325 with a C or better.

Typically Offered

Spring

IDSN 360 - History of Interior Design II**Credits 3**

A survey of design evolution of architecture, interiors, furniture, textiles, and the minor arts from 1850 to the present.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 320.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

IDSN 399 - Interior Design Practicum**Credits 0-2**

Off-campus professional experience in an appropriate design-related setting.

Repeat for Credit

Y

Requisites

Prerequisite: IDSN 345 and IDSN 415 with a C or better.

Typically Offered

Summer

IDSN 410 - Housing and Its Environment**Credits 3**

Socioeconomic, political-legal, and consumer overview of housing. Includes individual, family, and public decisions

related to residential alternatives, their acquisition, and housing and environmental standards.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring

IDSN 415 - Digital Visualization II**Credits 2**

Introduction to and application of digital technologies used by interior design professionals for 3D representation and rendering of design solutions.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 310 and IDSN 325 with a C or better.

Co-requisite: IDSN 345.

Typically Offered

Spring

IDSN 425 - Interior Design Studio 5**Credits 4**

Application of theory and research in medium scale projects. Focus on construction systems, materials, and methods. Continued emphasis on communication skills, programming, spatial design, and application of codes and regulations.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 345 and IDSN 415 with a C or better.

Co-requisite: IDSN 435.

Typically Offered

Fall

IDSN 435 - Systems and Technology for Interior Design I

Credits 3

Introduction to the principles of lighting, daylighting, acoustics, water supply, sanitation, thermal comfort, and indoor air quality to enhance human wellbeing.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 101 and PHYS 103 or PHYS 113 or PHYS 115 with a C or better

Typically Offered

Spring

IDSN 440 - Systems and Technology for Interior Design II**Credits 3**

Integration and application of all building systems with a focus on new technology and support of human wellbeing.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 425 and IDSN 435 with a C or better.

Typically Offered

Fall

IDSN 445 - Interior Design Studio 6**Credits 4**

Development of working drawings and specifications for projects integrating building systems and interior construction.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 425 and IDSN 435 with a C or better.
Co-requisite: IDSN 440.

Typically Offered

Spring

IDSN 499 - Problems in Interior Design**Credits 0-18**

Independent study.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

IDSN 530 - Interior Design Practices and Procedures**Credits 3**

Ethics, business procedures, and professional development; contract services and administration; and preparation for job market entry as applied to the practice of interior design.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 425 with a C or better and admission to the interior design program.

Typically Offered

Spring

IDSN 545 - Interior Design Studio 7**Credits 4**

Application of design theory to create solutions for complex, large-scale interior spaces. Projects require implementation of all phases of the design process. Students will gain greater understanding of the interior designer's responsibilities within the context of the design professions.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 445 and IDSN 530 with a C or better.

Typically Offered

Fall

IDSN 599 - Interior Design Internship

Credits 3-4

Supervised off-campus professional experience in appropriate design-related firms, government agencies, or the housing industry.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 445 and IDSN 530 with a C or better and admission to the interior design program and a 2.2 cumulative GPA and 2.5 GPA in professional areas.

Typically Offered

Fall, Spring, Summer

IDSN 600 - Interior Design Study Tour

Credits 1-3

Supervised off-campus tour to acquaint the student with rich artistic and cultural locations around the world and expand student's global perspectives of the design profession. Lectures and tours target important interior/architectural design and furniture collections.

Repeat for Credit

Y

Requisites

Prerequisite: Instructor's permission.

Typically Offered

Fall, Spring, Summer

IDSN 630 - Topics in Advanced Interior Design Theory

Credits 3

An examination of contemporary social and cultural influences on design theory and applications within the interior design profession.

Repeat for Credit

Y

Requisites

Prerequisite: IDSN 345 with a C or better.

Typically Offered

Fall, Spring

IDSN 645 - Interior Design Studio 8

Credits 4

Application of design theory to create solutions for complex, large-scale interior spaces. Projects will conform to professional standards regarding design process, protection of health, safety, and welfare, and construction methods.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 445 and IDSN 530 with a C or better.

Typically Offered

Spring

IDSN 650 - Advanced Design and Behavior in the Interior Environment

Credits 3

The design of interior environments explored in an ecological, behavioral, and cultural context.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 345 or consent of instructor.

Typically Offered

Fall, Spring

IDSN 651 - Design for Supportive Environments

Credits 4

Analysis of the age and ability related needs and challenges faced by children, older adults, and persons with disabilities. Team approaches to providing living and work environments that accommodate both universal and special human needs.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 345 with a C or better.

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

IDSN 660 - Advanced Kitchen and Bath Design**Credits 3**

Functional and research basis for planning and arranging based on activity analysis, equipment, materials, lighting, and ventilation.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 345 and IDSN 435 with a C or better and admission to the interior design program.

Typically Offered

Spring

IDSN 760 - Historic Preservation and Restoration of Interiors**Credits 3**

Principles, guidelines, and qualities of preservation and restoration of interiors. Research and application.

Repeat for Credit

N

Requisites

Prerequisite: IDSN 320 and IDSN 360; or ENVD 250 and ENVD 251.

Typically Offered

Fall, Spring

IHS 110 - Introduction to Integrative Human Sciences**Credits 1**

This course will provide the foundation for students in the IHS major. The course will introduce students to the framework that guides the discipline and the curriculum.

Repeat for Credit

N

Typically Offered

Fall

IHS 200 - Topics in Integrative Human Sciences I**Credits 0-3**

Exploration of topics in human science/family and consumer sciences.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IHS 310 - Foundations of Integrative Human Sciences**Credits 3**

Examination of the Family & Consumer Sciences Body of Knowledge Framework and application to professional practice and ethical decision-making.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing or consent of instructor.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

IHS 399 - Integrative Human Sciences Applied Learning Orientation

Credits 1

Provides support and guidance for students as they select an applied learning experience specific to their personal and professional goals.

Repeat for Credit

N

Requisites

Prerequisite: IHS 110 with a grade of C or better; IHS Majors only.

Typically Offered

Fall, Spring

IHS 400 - IHS Applied Learning Experience**Credits 1-3**

Learners will participate in applied learning experiences specific to their personal and professional goals. These experiences will be designed to meet the needs of the individual learner and provide an opportunity for application of skills and knowledge; reflection on professional practice and preparation for roles as future leaders and change agents.

Repeat for Credit

Y

Requisites

Prerequisites: IHS 110; IHS 399 with a grade of B or better; IHS majors only.

Typically Offered

Fall, Spring, Summer

IHS 410 - Integrative Human Sciences Seminar**Credits 2**

Application of career and professional skills relevant to students majoring in Integrated Human Sciences. Specific focus on the application of the FCS Body of Knowledge to professional practice.

Repeat for Credit

N

Requisites

Prerequisite: IHS 310

Typically Offered

Fall-Odd Years

IHS 420 - Family and Consumer Science Methods for Secondary and Middle Schools**Credits 3**

Principles of teaching applied to family and consumer sciences instruction in the secondary and middle schools including: motivation, organization of subject matter, lesson/unit planning, assessment and reporting, organization and management of the classroom, and methodology and materials of the secondary and middle schools.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315, EDSP 323, and EDCI 320.
Corequisite: EDSEC 455, EDSEC 477, EDSEC 525 and IHS 425.

Typically Offered

Fall

IHS 425 - Family and Consumer Science Education Practicum**Credits 2**

This field-based experience provides the opportunity for students to plan, teach, and evaluate family and consumer science education lessons within a placement at the middle or secondary level. This practicum also allows students to incorporate instructional strategies and application of materials from the methods course.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315, EDSP 323, and EDCI 320.
Corequisite: EDSEC 455, EDSEC 477, EDSEC 525, and IHS 420.

Typically Offered

Fall

IHS 500 - Topics in Integrative Human Sciences II

Credits 0-3

Advanced exploration of topics in human science/family and consumer sciences.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IMSE 015 - Engineering Assembly**Credits 0**

Assemblies are held once a month for practicing industrial engineers to make presentations to the students. Students are given an opportunity to interact with the visitors. The purpose is to provide an opportunity to learn about various companies and their products and operations.

Note

Required every semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

IMSE 050 - Industrial Plant Studies**Credits 0**

Trip to industrial centers for study of facilities of special interest to industrial engineering students.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing in industrial engineering.

Typically Offered

Spring

IMSE 201 - Introduction of Industrial Engineering**Credits 3**

Introduction to the core areas of industrial engineering including ergonomics, operations, research, quality control, management, engineering economics, resource management, production systems and inventory control. Both engineering ethics and careers in industrial engineering will be discussed.

Note

Two hours lecture and two hours lab week.

Repeat for Credit

N

Requisites

Corequisite: MATH 220.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

IMSE 250 - Introduction to Manufacturing Processes and Systems**Credits 2**

This course provides an introduction to manufacturing processes and systems. The history and impact of manufacturing on society will be explored. A review of manufacturing processes and the products to which they are best suited will be emphasized. The impact of product design on manufacturability will be introduced. The role of engineers in designing good manufacturing processes and systems will be discussed.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: MATH 205 or MATH 220.

Typically Offered

Fall, Spring

IMSE 251 - Manufacturing Processes Laboratory

Credits 1

General introduction to foundry, welding, and machining. Includes safe manufacturing practices, metrology, and hands-on experience in foundry, welding, and machining operations.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: IMSE 250.

Typically Offered

Fall, Spring

IMSE 252 - Welding Laboratory**Credits 1**

Introduction to welding. Includes safe welding practices and lab experiments in gas, spot, and arc welding.

Note

Three hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

IMSE 255 - Computer Numerical Control Laboratory**Credits 1**

Introduction to computer numerical control. Part programming for CNC lathes and mills will be accomplished.

Note

Three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

IMSE 441 - Introduction to Analytics**Credits 3**

This course covers an introduction to analytics, which includes computer programming, statistics and mathematical decision making. Topics include: arrays, loops, data structures, data visualization, hypothesis testing, confidence intervals, multidimensional linear regression, distribution fitting, and identifying objectives and constraints to recommend data driven solutions.

Repeat for Credit

N

Requisites

Prerequisite: At least 3 hours of STAT courses at the 300 level or above and at least 3 hours of CIS courses at the 200 level or above.

Typically Offered

Fall, Spring

IMSE 497 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

IMSE 499 - Honors Research in Industrial Engineering**Credits 1-18**

Individual research problem selected with approval of faculty advisor. Open to students in the College of Engineering honors program. A report is presented orally and in writing during the last semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

IMSE 501 - Industrial Management

Credits 3

Basic functions in an industrial organization and their interrelationships; management considerations involving product, process, plant, and personnel.

Note

Three hours recitation a week.

Repeat for Credit

N

Typically Offered

On sufficient demand

IMSE 530 - Engineering Economic Analysis

Credits 2

The analysis of the economic aspects of engineering/industrial projects. Focus on decision making among competing alternatives, including replacement decisions. Includes: cost estimating, time-value of money and effects of depreciation and taxation. Methods of comparing alternatives are developed, including: equivalent worth, rate of return, break even analysis, and benefit-cost ratio. The course period lasts the first ten weeks of a semester.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220.

Typically Offered

Fall, Spring

IMSE 532 - Industrial Project Evaluation

Credits 1

The analysis and selection of engineering/industrial projects. This course is a continuation of IMSE 530. Topics in addition to IMSE 530 includes: risk/uncertainty, impact of inflation, capital rationing, multiple criteria decision making, and determining the MARR. The course period lasts the last five weeks of a semester.

Repeat for Credit

N

Typically Offered

Fall, Spring

IMSE 541 - Statistical Quality Control

Credits 3

Normal, binomial, and frequency distributions. Seven process improvement tools. Control charts on means and variances for variables and attributes. Design of experiments for process and product design. Acceptance sampling plans.

Note

Two hours recitation and two hours laboratory a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 441 or STAT 511 or STAT 705

Typically Offered

Fall

IMSE 555 - Industrial Facilities Layout and Design

Credits 3

Design of industrial facilities with emphasis on manufacturing engineering and material handling.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 251 and corequisite or prerequisite: IMSE 530.

Typically Offered

Spring

IMSE 560 - Introduction to Operations Research I

Credits 3

A study of the methods of operations research including model formulation and optimization. Topics include: linear programming, sensitivity analysis, network flows, and graph optimization.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 222 and MATH 551.

Typically Offered

Fall

IMSE 562 - Materials and the Impact of Manufacturing Processes**Credits 3**

The categorization and analysis of materials used in manufacturing is introduced. Emphasis is placed on the electronic and mechanical properties of materials along with the impact that manufacturing processes have on these properties. Through laboratory work, the students will learn how to design and conduct manufacturing experiments to measure material properties and explore the interplay between processes and properties. 3 credit hours, 2 hours lecture, 1 hour lab per week [2 lab sections]. Offered spring semesters every year.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214, CHE 354.

Typically Offered

Spring

IMSE 563 - Manufacturing Processes Engineering**Credits 3**

The effects of operating variables on manufacturing processes such as machining, metal forming, casting, welding, plastics, etc. Emphases are on manufacturing process theory, process variables measurement, and the

technical inferences of collected data. Strength of materials, manufacturing process theory, instrumentation, computer data acquisition, and data analysis concepts are included. Laboratory testing of manufacturing processes and the engineering design of experiments for process variable measurements are used to develop efficient manufacturing processes.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 251, CHE 355, and CE 530 or CE 333 and ME 512.

Typically Offered

Fall-Odd Years

IMSE 564 - Product and Process Engineering**Credits 3**

A study of the interrelationships between product design and production process selection. Emphasis is on the development of economic production systems for discrete products in a competitive manufacturing environment. Concepts of design for manufacture and assembly, tool engineering, and manufacturing systems design are included.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 250, IMSE 251, IMSE 530.

Typically Offered

Spring-Even Years

IMSE 580 - Manufacturing Systems Design and Analysis**Credits 4**

Comprehensive design and analysis of a manufacturing system: integration of the undergraduate industrial engineering and manufacturing engineering courses.

Note

Two hours recitation and four hours lab a week.

Repeat for Credit

N

Requisites

(Prerequisite or concurrent; IMSE 541, IMSE 555, IMSE 633, and IMSE 660) or (Prerequisite; ME 533)

Typically Offered

Fall

IMSE 591 - Senior Design Project I**Credits 2**

Students organize themselves in teams, not exceeding five students in each team. Each team is responsible to establish a client. The teams select a general subject agreeable to the client, formulate a specific design project, and gather data and resources needed to support the project.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: 24 credit hours of IMSE 500 level and above courses.

Typically Offered

Fall, Spring

IMSE 592 - Senior Design Project II**Credits 2**

Continuation of IMSE 591 in which student teams complete engineering design projects formulated and approved in IMSE 591.

Note

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 591.

Typically Offered

Fall, Spring

IMSE 602 - Topics in Industrial Engineering**Credits 1-18**

Lectures on recent topics in industrial engineering.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IMSE 604 - Independent Study of Industrial Engineering**Credits 1-18**

This course involves independent study at the introductory graduate level.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IMSE 605 - Advanced Industrial Management**Credits 3**

Contemporary management philosophies and their impact on engineers and engineering managers. Topics include: planning, organizing, leading, and controlling.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 501 or MANGT 220.

Typically Offered

Fall

IMSE 610 - Occupational Safety Engineering

Credits 3

An overview of factors affecting safety in organizations, emphasizing analysis techniques and design strategies. Topics include occupational safety, accidents, fire protection, industrial hygiene, hazardous waste, toxicology, radiation safety, product liability and federal standards. A project involving a hazard analysis and the design of a solution for a field location is required.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 251.

Typically Offered

Spring-Even Years

IMSE 623 - Industrial Ergonomics**Credits 3**

Process analysis and charting; principles of motion economy and ergonomics; work stations and environments; micromotion analysis and an introduction to standard data systems.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 510.

Typically Offered

Fall

IMSE 625 - Work Environments**Credits 3**

Basic structure and performance of the human, viewed as a component in information processing and control systems. Effect of visual, auditory, toxic, and thermal environments.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 251.

Typically Offered

Other

IMSE 633 - Production Planning and Inventory Control**Credits 3**

Principles, techniques, and applications of production planning and inventory control. The course covers strategic planning tools such as forecasting and aggregate planning as well as tactical tools such as inventory management and scheduling.

Note

Three hours recitation.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 250. Prerequisite or concurrent: IMSE 560.

Typically Offered

Spring

IMSE 641 - Quality Engineering**Credits 3**

An introduction to the modern practice of quality engineering concepts, systems, strategies, and tools to both manufacturing and service industries. Topics include advanced techniques related to statistical process control, international quality standards, quality data management, and automatic inspection.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 441 or STAT 511 or STAT 705

Typically Offered
Spring

IMSE 643 - Industrial Simulation

Credits 3

Basic concepts of computer simulation modeling of manufacturing, production, service and other stochastic systems. Use of a commercial simulation software environment to build, analyze, verify and validate models. Use of models as a system design tool through statistical and optimization techniques.

Note
Three hours recitation per week.

Repeat for Credit
N

Requisites
Prerequisite: CIS 200 or CIS 209 or ME 400
Prerequisite or concurrent: IMSE 441 or STAT 511 or STAT 705, and IMSE 660

Typically Offered
Fall, Spring

IMSE 660 - Operations Research II

Credits 3

Continuation of IMSE 560. Topics include: integer programming, nonlinear programming, Markov chains, and queuing theory.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: IMSE 560 and STAT 510.

Typically Offered
Spring

IMSE 662 - Computer Aided Manufacturing

Credits 3

Concepts in CAM, integrated control of machine tools and transport devices with production control. Concepts of CAM and automated assembly in small lot production environment.

Note
Two hours lecture and three hours lab a week.

Repeat for Credit
N

Requisites
Prerequisite: IMSE 251 and CIS 209, or 200, or ME 400.

Typically Offered
Fall

IMSE 664 - Additive Manufacturing

Credits 3

A study of current 3D printing or additive manufacturing technologies that convert a digital file into a physical object. Emphasis is on rapid prototyping involving materials, processes, techniques, and 3D printing machines. Capabilities and limitations of 3D printing technologies are included.

Note
Two hours lecture and two hours lab.

Repeat for Credit
N

Requisites
Prerequisite: ME 212.

Typically Offered
Spring-Odd Years

IMSE 666 - Operations Research III

Credits 3

A continuation of IMSE 660. Covers more advanced aspects of LP and NLP. Introduces three new topics: normative theory of decision and games, dynamic programming and Markov decision systems.

Repeat for Credit
N

Requisites

Prerequisite: IMSE 660. Prerequisite or concurrent: IMSE 530.

Typically Offered
Spring

IMSE 680 - Quantitative Problem Solving Techniques

Credits 3

Survey of decision making techniques. Topics covered include: linear, integer and nonlinear programming; network flows and stochastic processes. A focus of the course will include modeling and the use of software to solve these problems.

Note
Three hours of lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: MATH 205.

Typically Offered
Summer

IMSE 685 - Principles of Manufacturing Information Systems

Credits 3

Introduction to the theory and concepts of information for manufacturing. Design of manufacturing systems such as MRP, SFRS, CAD/CAM, etc. Concerns of integration and man-machine interface in manufacturing systems.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: IMSE computer programming elective from approved Departmental list.

Prerequisite or concurrent: IMSE 633.

Typically Offered
Spring

IMSE 710 - Transportation Logistics

Credits 3

This course provides comprehensive coverage of logistics system design, analysis, and management, with a particular emphasis on freight transportation and supply chain systems. It introduces key challenges arising in supply chain systems, quantitative models for addressing these challenges, and methods for solving the models. Emphasis is placed on analyzing model results and communicating their implications for decision-making.

Repeat for Credit
N

Requisites
Prerequisite: IMSE 660, IMSE 680 or IMSE 780.

Typically Offered
Spring-Odd Years

IMSE 730 - Data Engineering I – Time Series & Topological Data Analysis

Credits 3

Introduction to theories and concepts of data analytic and machine learning on time series and topological data. Data models and analysis systems include forecasting, predictive models, process change point detections, classification, clustering, stage-dependent decisions applying to high-dimensional time series data and topological data. Applications include data integration and data-to-decisions in real-world systems, such as supply chain, logistics, financial engineering, and advanced manufacturing processes.

Repeat for Credit
N

Requisites
Prerequisite: IMSE 441 (or (CIS 209 and STAT 511)), MATH 222, and MATH 551

Typically Offered
Spring

IMSE 751 - Normative Theory of Decisions and Games

Credits 3

Bayes theorem, Bayesian estimators, utility, loss function and risk, minimax strategies, elementary game theory.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 510.

Typically Offered

Fall-Odd Years

IMSE 752 - Multiple Criteria Decision Analysis

Credits 3

This course covers decision processes for problems involving multiple conflicting criteria, including individual and group decision making. Multiple approaches, including value function methods, goal/aspiration methods, and outranking methods, are considered.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 560

Typically Offered

Fall-Even Years

IMSE 760 - Stochastic Calculus Financial Engineering

Credits 3

This course will serve as an introduction to the basic concepts and computing techniques of financial engineering and its real-life applications. These basics can be applied in many other aspects of Industrial Engineering used throughout stochastic processes, probability theory, system simulation, portfolio/risk management, and supply chain optimization.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 530; IMSE 660; and CIS 209, or CIS

200, or ME 400.

Typically Offered

Spring-Odd Years

IMSE 780 - Methods of Operations Research

Credits 3

This course is intended to give an overview of OR at the graduate level. After this course, the student will have the general basic knowledge in OR and a better idea about the usefulness and interrelationships of the various subjects in O.R. Topics to be covered include the various optimization techniques, stochastic processes and optimization, and the various approaches in the treatment of uncertainty.

Note

Three hours recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 560 and STAT 510.

Typically Offered

Fall

IMSE 785 - Big Data Analytics

Credits 3

Topics include big data management, data architecture of hosting big data, big data retrieval languages, parallel computing methods, big data analytical methods, and data visualization.

Repeat for Credit

N

Requisites

Prerequisite: CIS 209; STAT 510 or STAT 250.

Typically Offered

Summer

IMSE 802 - Advanced Topics in Industrial Engineering

Credits 1-18

Lectures on recent advanced topics in industrial

engineering.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IMSE 804 - Advanced Independent Study in Industrial Engineering

Credits 1-18

This course involves independent study of recent advanced topics in industrial engineering.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

IMSE 805 - Management of Research and Engineering

Credits 3

Engineering administration; organization factors in decision-making.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 501 or MANGT 220

Typically Offered

On sufficient demand

IMSE 806 - Engineering Project Management

Credits 3

Planning, scheduling, and controlling engineering projects. Includes determination of appropriate project team, cost/benefit analysis, PERT and CPM scheduling techniques, reporting, and use of computerized project management tools.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 530 and IMSE 501 or MANGT 220.

Typically Offered

Spring

IMSE 808 - Systems Engineering Fundamentals

Credits 3

Systems engineering is an interdisciplinary engineering management process used to develop an integrated, life-cycle balanced set of system solutions that satisfy customer needs. This course provides the fundamentals of a systems engineering approach to solving complex engineering systems problems. This course will address systems engineering processes and tools as they relate to the development and life cycle management of complex systems. Topics included in the course are analyzing customer's needs, requirements development, systems design, development and integration, developing technical performance measures, system verification and managing cost, schedule, and risk in engineering tasks. This course will also introduce reliability, availability and maintainability concepts and their applicability with complex systems. This course is applicable to all engineering disciplines involved with complex engineering systems.

Repeat for Credit

N

Requisites

Prerequisite: 9 graduate credits from any engineering discipline, B.S. Engineering or Computer Science degree.

Typically Offered

On sufficient demand

IMSE 810 - Industrial Logistics Engineering

Credits 3

The course provides comprehensive coverage of supply chain logistics components and system issues, including control of the movement of goods and information,

coordination of supply and demand in creation and maximization of time and place utility. Emphasis is given to integrating workflow modeling, control, and design concepts and performance evaluation of logistic activities such as transportation, inventory, warehousing, and information technology. The systems viewpoint is explored at the individual firm level and from the perspective of inter-firm relationships among participants in logistics supply chains. Recognition is also given to important interrelationships between logistics and production, marketing, and financial management.

Note

Three hours recitation per week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 660, IMSE 680 or IMSE 780.

Typically Offered

On sufficient demand

IMSE 811 - Advanced Production and Inventory Control**Credits 3**

Analytical and mathematical methods of making decisions on production, inventories, human resources, and shipping in modern industrial plants.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 633.

Typically Offered

Spring

IMSE 822 - Advanced Engineering Economy**Credits 3**

This course expands on the principles of the fundamental engineering economics analysis. Emphasis is placed on quantification and evaluation of risk and uncertainty factors, effects of inflation and taxes, economic

consequences of estimating models, utility theory, engineering capital equipment replacement analysis and decision-tree and multi-attribute decision models.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 530, or ME 560, or CE 680.

Typically Offered

Fall-Odd Years

IMSE 825 - Tribology in Manufacturing**Credits 3**

An introduction to system approach to Tribology; Surface Topography; Physical, Chemical, and Geometric Nature of Surfaces; and the Mechanics of contact between surfaces. This course also investigates various theories of friction and wear; hydrodynamic; elastohydrodynamic, and boundary lubrication; frictional instabilities; rolling contact problems; and application of system methodology to tribological problems in engineering design and manufacturing.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 214 and IMSE 563.

Typically Offered

On sufficient demand

IMSE 830 - Applied Fuzzy Set Theory**Credits 3**

The emphasis will be on applicational aspects. Topics covered are elementary fuzzy set theory, fuzzy measure, possibility theory, fuzzy linear programming and other fuzzy optimization techniques, fuzzy linguistics and expert systems, fuzzy production and inventory control, and fuzzy operations research models.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 510.

Typically Offered

On sufficient demand

IMSE 841 - Advanced Topics in Quality Engineering**Credits 3**

A survey of current advances in quality engineering. Includes both off-line and on-line quality engineering.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 704, STAT 705; IMSE 641 and CIS 209, or CIS 200, or ME 400.

Typically Offered

Fall-Even Years

IMSE 842 - Reliability Theory**Credits 3**

The mathematics of reliability theory. The hazard function. Calculation of failure density and mean life for series, parallel systems, and various types of standby systems. Hypotheses tests on mean life. Life testing with censoring.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 511.

Typically Offered

On sufficient demand

IMSE 850 - Ergonomics (Human Factors) Engineering**Credits 3**

The design and analysis of applied experimental research on human behavior as applied to engineering systems. An experimental project.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 703.

Typically Offered

On sufficient demand

IMSE 865 - Simulation of Industrial Management Systems**Credits 3**

Simulating industrial management systems on computers utilizing Monte Carlo techniques and simulation languages. Numerical methods related to simulation.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 643.

Typically Offered

Summer-Odd Years

IMSE 866 - Applied Stochastic Processes**Credits 3**

Survey of stochastic processes. Topics covered include: discrete and continuous Markov chains, random walks, queuing theory and renewal theory.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 510.

Typically Offered

Fall-Even Years

IMSE 867 - Stochastic Programming**Credits 3**

Stochastic programming (SP) aims to determine optimal solutions in the presence of data uncertainty. The course covers two-stage stochastic linear programming, recourse, chance constraint optimization, multi-stage SP, stochastic integer programming, Benders decomposition, L-shaped method, heuristics, simulation-based (Monte Carlo simulation) methods, and bounds on optimal solutions. Numerous applications exist, and examples may be taken from agriculture planning, manufacturing, supply chain, reliability, cyber security, power grids or other systems.

Repeat for Credit

N

Requisites

IMSE 560 and STAT 510 or equivalent

Typically Offered

Fall-Odd Years

IMSE 868 - Manufacturing Processes for Semiconductor Materials and Devices**Credits 3**

Research topics on manufacturing processes for semiconductor materials and devices. Processes covered include; crystal growing, slicing, edge profiling, lapping, wafer grinding, wet etching, polishing, cleaning, oxidation, lithography, dry etching, diffusion, metallization, CMP (Chemical-Mechanical Planarization), backside thinning, dicing, bonding, packaging, final testing.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 250 and IMSE 563.

Typically Offered

Fall-Even Years

IMSE 871 - Advanced Topics in Computer Integrated Manufacturing**Credits 3**

Modern issues of computerized manufacturing considering both hardware and software approaches and methods. Advanced concepts in intelligent machine programming and applications, group technology, computer aided process planning, and scheduling will be discussed. Research issues will be presented.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 633, IMSE 662 or equivalents.

Typically Offered

On sufficient demand

IMSE 872 - Industrial Forecasting Techniques and Applications**Credits 3**

The problems of model construction for industrial forecasting. The application of least squares, regression, exponential smoothing, and adaptive fitting will be studied in solving industrial engineering problems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 511 or STAT 705.

Typically Offered

On sufficient demand

IMSE 873 - Industrial Systems Analysis

Credits 1-18

Analysis and synthesis of automatic control systems with application to machines and processes and industrial management systems. A study of optimal control, stability, and sensibility of industrial management systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor and IMSE 660.

Typically Offered

On sufficient demand

IMSE 881 - Linear Programming**Credits 3**

Development of the theory of linear programming and related topics including simplex methods, duality theory, integer programming, transportation methods, and stochastic linear programming. Application to industrial problems and the use of computer solutions are emphasized.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 560.

Typically Offered

Fall-Even Years

IMSE 882 - Network Flows and Graph Theory**Credits 3**

Survey of topics from Network Flows and Graph Theory with an emphasis on algorithmic analysis. The topics covered include: Complexity Analysis, Shortest Paths, Maximum Flows, Network Simplex, Minimum Spanning Trees, Matching, Planar Graphs, Colorings, Perfect Graphs and Heuristics.

Note

Three hours lecture a week.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

IMSE 884 - Integer Programming and Combinatorial Optimization**Credits 3**

Solution techniques to optimization problems involving integer variables. The topics covered include: single-and multiple-branching, implicit enumeration, polyhedral theory and cutting planes, mixed integer programs, unimodular matrices and matroids.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 660.

Typically Offered

Spring-Odd Years

IMSE 885 - Advanced Manufacturing Information Systems**Credits 3**

Survey of topics in Computer Integrated Manufacturing. Issues such as the Manufacturing Automation Protocol (MAP), representation of solids in CAD, storage and retrieval of such information are considered.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: IMSE 685 or equivalent.

Typically Offered

On sufficient demand

IMSE 888 - Research Methods in Industrial Engineering

Credits 3

This course will provide students with effective methods to perform literature reviews, survey current solution methodologies, develop and evaluate research and present research results.

Repeat for Credit
Y

Requisites

Prerequisite or concurrent enrollment: IMSE 780 or IMSE 641 or IMSE 811.

Typically Offered
On sufficient demand

IMSE 889 - Applied Methods in Industrial Engineering

Credits 1

This class requires students to have at least 6 weeks of full-time work experience in a job related to Industrial Engineering.

Note
This course can be taken only once by a graduate student. Approval of major professor and department head.

Repeat for Credit
Y

Typically Offered
Summer

IMSE 890 - Applied Methods in Industrial Engineering II

Credits 2

This class requires students to have at least 12 weeks of full-time work experience in a job related to Industrial Engineering.

Note
This course can be taken only once by a graduate student. Approval of major professor and department head.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

IMSE 892 - Graduate Seminar in Industrial Engineering

Credits 0

Presentation and discussion of topics of contemporary interest in industrial or manufacturing engineering. M.S. and Ph.D. candidates make one presentation.

Note
One one-hour seminar meeting a week.

Repeat for Credit
Y

Typically Offered
Fall, Spring

IMSE 898 - Master's Report

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

IMSE 899 - Master's Thesis

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

IMSE 971 - Industrial Queuing Processes

Credits 3

Introduction to the queuing process and theory of queues; analysis of single and multistation queues; application to production, materials handling, inventory and maintenance systems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 510.

Typically Offered

On sufficient demand

IMSE 976 - Scheduling Theory**Credits 3**

Project scheduling, assembly line balancing, shop scheduling, basic structure, measures of performance, combinatorial and statistical aspects. Various approaches to the analysis of shop scheduling.

Note

Three hours recitation a week. Consent of instructor.

Repeat for Credit

N

Typically Offered

On sufficient demand

IMSE 980 - Advanced Topics in Manufacturing Research**Credits 1-3**

Study of topics related to recent advances in manufacturing processes and manufacturing engineering. Selected topics vary by semester according to the interests and needs of students and faculty.

Repeat for Credit

Y

Typically Offered

On sufficient demand

IMSE 982 - Nonlinear Programming**Credits 3**

Study of nonlinear models and their solution. Topics covered are nonlinear programming including Kuhn-Tucker theory, quadratic programming, separable programming, geometric programming, gradient and search methods, quasilinearization, and invariant imbedding.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 510.

Typically Offered

Spring-Even Years

IMSE 990 - Advanced Topics in Operations Research**Credits 1-6**

Study of topics related to operations research not covered in other courses. Selected according to the interests and needs of graduate students.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

On sufficient demand

IMSE 991 - Advanced Topics in Decision Theory**Credits 3**

Decision processes for problems involving multiple conflicting criteria; multiple attribute decision making; multiple objective decision making, and group decision making under multiple criteria. Various methods/approaches for different problems are discussed.

Note

We are concurrently introducing IMSE 752 so that the

undergraduate student can take it. This 991 course will be for graduate students only.

Repeat for Credit

N

Requisites

Prerequisite: IMSE 751 or IMSE 752.

Typically Offered

On sufficient demand

IMSE 999 - Dissertation Research

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

INDD 292 - Design Thinking

Credits 3

Design Thinking is the process of analyzing the problem areas from a given project statement and generating a solution through observation, research, conceptualization, and iteration. Through this course, students will learn how to apply user-centered design approaches to a given design challenge. This course will cover selected design thinking tools and methods in four phases: 1) Explore, 2) Discover, 3) Develop, and 4) Deliver. Several case studies will demonstrate how Design Thinking can be applied to other fields, and students will share their reflections and experiences about how they can make use of the process, methods, and tools they have learned in their respective fields.

Repeat for Credit

N

Typically Offered

Summer

INDD 307 - INDD Design Studio I

Credits 5

Introduction to design research, user behavior, ergonomics, and human factors in the context of product design. Projects focus on iterative ideation and development through ink and marker sketching and physical model making. Students will learn to document and present designs including physical models, detailed renderings, and documentation of their design development process.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the professional program in industrial design.

Typically Offered

Fall

INDD 310 - INDD Digital Applications

Credits 2

Provides an advanced understanding of digital lighting, materials, animation, advanced modeling techniques, and renders. Explores parametric design uses and applications. Investigates strategies and techniques to create products using digital tools.

Repeat for Credit

N

Requisites

Prerequisite: IAID 431.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

INDD 320 - INDD Design Studio II

Credits 5

Basic principles of Product Design process through research, ideation, sketching, modeling, prototyping and presentation. Explores and analyzes complex social, cultural, and economical aspects of society for product design development.

Repeat for Credit

N

Requisites

Prerequisite: INDD 307.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

INDD 325 - Human Factors in Industrial Design**Credits 3**

Deals with an interdisciplinary science focusing on the interaction of human performance, capabilities, limitations and behavior with design factors in performance environments like workplaces and products with the emphasis on optimal safety, efficiency, productivity and comfort for diverse human populations.

Repeat for Credit

N

Requisites

Prerequisite: INDD 307

Typically Offered

Fall

INDD 350 - Product Semantics**Credits 3**

Explores visual and symbolic qualities of the man-made forms in the context of their use and application of this knowledge in order to understand the aspects of communication in Industrial Design. Course also focuses on the cognitive and social context of the products.

Repeat for Credit

N

Typically Offered

Spring

INDD 433 - User Interface and User Experience Design**Credits 3**

In-depth study of the development, strategy, and execution of interactive products and services to create meaningful experiences that enhance user engagement and satisfaction within the scope of industrial design. Applies user-centered design by conducting user research including surveys, interviews, and usability testing. Students will create prototypes with high fidelity mockups using industry standard tools.

Repeat for Credit

N

Requisites

Prerequisite: INDD 435 and INDD 310

Typically Offered

Spring

INDD 435 - INDD Design Studio III**Credits 5**

Advanced principles of the Industrial Design process. Explores different theories and techniques to develop products utilizing Human Centered Design, Design Thinking, and Universal Design. Holistic thinking in regard to ethical responsibility throughout the product's Life Cycle from decisions made in manufacturing processes, material choices and human factor design.

Repeat for Credit

N

Requisites

Prerequisite: INDD 320.

Typically Offered

Fall

INDD 440 - INDD Design Studio IV**Credits 5**

Exposes students to a deeper understanding about user experience, user interface and form development in the Industrial Design process. Provides an advance research and analysis of design problems and opportunities, using Human Centered Design, Universal Design and Design Thinking.

Repeat for Credit

N

Requisites

Prerequisite: INDD 435.

Typically Offered

Spring

INDD 500 - Materials and Manufacturing Processes

Credits 3

Seeks to provide an advanced understanding of materials and processes commonly used by Industrial Designers and manufacturers. The objective is to develop a more precise, professional and accurate approach to design while broadening the student's technical base.

Repeat for Credit

N

Typically Offered

Spring

INDD 520 - Materials and Manufacturing Processes II

Credits 3

Building upon the knowledge established in INDD 500, this course deepens comprehension of materials and processes. Emphasizing practical applications to a design development and expand student's technical proficiency.

Repeat for Credit

N

Requisites

Prerequisite: INDD 500

Typically Offered

Fall

INDD 600 - Professional Practice

Credits 3

Studies of conventional and newly developing modes of professional design practice. Presented are the relationships of Industrial Designers to users, clients, manufacturing industry, society, government, and one another. Provides an

overview of design services and principal structures for industrial designers including consultancy, in-house, freelance, and self-production.

Repeat for Credit

N

Requisites

Prerequisite: INDD 435

Typically Offered

Spring

INDD 605 - Problems in INDD

Credits 1-18

Study of specific Industrial Design problems under the direct supervision of a member of the department.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

INDD 606 - INDD Design Studio V

Credits 5

This semester of study provides an option for an interdisciplinary collaborative studio course oriented towards replicating the learning experience and interactive activities that take place in the modern multidisciplinary professional office or a validated equivalent studio completed in an approved study program.

Repeat for Credit

N

Requisites

Prerequisite: INDD 440.

Typically Offered

Fall

INDD 644 - Internship

Credits 9

Fifteen-week internship in a professional environment with a focus on Industrial Design and/or Furniture Design: office and field experience.

Repeat for Credit

N

Requisites

Prerequisite: INDD 440. Corequisite: INDD 645

Typically Offered

Fall, Spring, Summer

INDD 645 - Internship Report**Credits 5**

Development of the student's analysis; observation, and communication skills in relationship to the professional office and field environment. Detailed documentation, online and on-campus, of the experiences encountered during internship, allowing classmates to learn from their peer's varied experiences as well as provide detailed documentation of the student's work during internship.

Repeat for Credit

N

Requisites

Prerequisite: INDD 440. Corequisite: INDD 644

Typically Offered

Fall, Spring, Summer

INDD 664 - Summer Internship**Credits 6**

Ten-week internship in a professional environment with a focus on Industrial Design and/or Furniture Design: office and field experience.

Repeat for Credit

N

Requisites

Prerequisite: INDD 440. Corequisite: INDD 665

Typically Offered

Summer

INDD 665 - Summer Internship Report**Credits 1**

Development of the student's analysis; observation, and

communication skills in relationship to the professional office and field environment. Detailed documentation, online and on-campus, of the experiences encountered during internship, allowing classmates to learn from their peer's varied experiences as well as provide a detailed documentation of the student's work during internship.

Repeat for Credit

N

Requisites

Prerequisite: INDD 440. Corequisite: INDD 664

Typically Offered

Fall, Spring, Summer

INDD 755 - Professional Practice: Discipline-Specific Topics**Credits 1**

Covers discipline-specific concerns, focusing on issues specific to architecture, interior architecture and product design, landscape architecture or regional and community planning.

Repeat for Credit

N

Typically Offered

Fall, Spring

INDD 800 - Professional Practice**Credits 3**

Studies of conventional and newly developing modes of professional design practice. Presented are the relationships of Industrial Designers to users, clients, manufacturing industry, society, government, and one another. Provides an overview of design services and principal structures for industrial designers including consultancy, in-house, freelance, and self-production.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing.

Typically Offered

Spring

INDD 801 - INDD Design Studio VI

Credits 5

Examines the interdisciplinary and collaborative design process with the aim of different formations in accordance with entrepreneurship studies, marketing, business, and engineering, as well as research and development. Focus areas vary from interdisciplinary practices to innovative technologies.

Repeat for Credit

N

Typically Offered

Spring

INDD 810 - INDD Capstone Studio

Credits 5-6

Students are to pursue design projects that encompass their previous educational experience validating their knowledge of the INDD program studies. The project will be based on extensive research and review. The project presentation will suggest unique and applicable solutions with clearly identified methodology of implementation.

Repeat for Credit

N

Requisites

Prerequisite: INDD 801, INDD 811.

Typically Offered

Fall, Spring, Summer

INDD 811 - Design Research

Credits 3

Identify evaluation criteria appropriate for design research and problem-solving; analysis of literature; construction of problem statements, development and documentation of design problem proposals and reports.

Repeat for Credit

N

Requisites

Prerequisite: INDD 440.

Typically Offered

Fall, Spring, Summer

INDD 815 - Advanced Studio Programming

Credits 2-3

Research of programming methodologies culminating in a programmatic document used as the basis for the design project in INDD 822 or IAID 824.

Repeat for Credit

N

Requisites

Prerequisite: INDD 801.

Typically Offered

Fall, Spring, Summer

INDD 822 - Advanced Industrial Design Studio

Credits 6

Students explore projects programmed under the previous semester INDD 815: Advanced Studio Programming. Projects must be relevant in a contemporary socio-cultural, architectural and technological context; employ rigorous design research processes and methodologies; identify user and usability needs/desires; accommodate market opportunities and constraints; explore multiple conceptual solutions in a variety of hand and digital media; build and document models and prototypes; and estimate material and manufacturing costs.

Note

A book, oral and visual presentation and display materials for an exhibition of the student's work will be required at the completion of the course.

Repeat for Credit

N

Requisites

Prerequisite: INDD 810, INDD 815.

Typically Offered

Fall, Spring, Summer

ITAL 101 - Italian I

Credits 4

Introduction to the structure of modern Italian.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ITAL 102 - Italian II

Credits 4

Continuation and completion of the study of modern Italian grammar, using the facilities of the language laboratory for audiolingual practice.

Repeat for Credit

N

Requisites

Prerequisite: ITAL 101 or equivalent.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ITAL 105 - Italian for Travelers

Credits 1-8

Prepares students for everyday situations on a visit to Italy.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

ITAL 300 - Italian III

Credits 4

Grammar review and reading selections from Italian literature.

Repeat for Credit

N

Requisites

Prerequisite: ITAL 102 or equivalent.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ITAL 301 - Italian IV

Credits 4

Selective review of grammar and reading of examples of modern Italian literature.

Repeat for Credit

N

Requisites

Prerequisite: ITAL 300.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

ITAL 520 - Special Studies in Italian

Credits 1-18

Special Studies in Italian

Note

Consent of department head and instructor involved.

Repeat for Credit

N

Typically Offered

Other

JAPAN 101 - Japanese I**Credits 4**

Introduction to the fundamental linguistics and cultural characteristics of the Japanese language and its writing systems (Hiragana, Katakana, and Kanji).

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 200 - Japanese II**Credits 4**

Continuation of Japanese I. Development of functional skills for familiar situations.

Repeat for Credit

N

Requisites

Prerequisite: JAPAN 101 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 201 - Japanese III**Credits 4**

Continuation of Japanese II with emphasis on building and applying basic language knowledge in communicative tasks; exercises in oral interactions and interactions involving text; weekly language lab; approx. 1-- new kanji in text.

Note

Not open to native speakers of Japanese.

Repeat for Credit

N

Requisites

Prerequisite: JAPAN 200 or equivalent.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 299 - Special Studies in Japanese**Credits 1-8**

Special Studies in Japanese

Repeat for Credit

Y

Requisites

Prerequisite: Permission of the instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 301 - Japanese IV**Credits 4**

Continuation of Japanese III. Enhancement of speaking and writing skills, and reading and listening comprehension.

Repeat for Credit

N

Requisites

Prerequisite: JAPAN 201 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 391 - Culture of Japanese Communication**Credits 3**

Introduction to verbal and nonverbal cultural aspects of Japanese discourse. Includes comparative study, followed by discussion on application of knowledge in cross-cultural context.

Repeat for Credit

N

Requisites

Prerequisite: JAPAN 191.

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 501 - Japanese V**Credits 3**

Development of communication skills through application activities such as problem-solving tasks and role plays. Enhancement of vocabulary, structures, and their usage. Emphasis on extended discourse.

Repeat for Credit

N

Requisites

Prerequisite: JAPAN 301 or equivalent.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 502 - Japanese VI**Credits 3**

Continuation of Japanese V. Development of functional skills for general situations.

Repeat for Credit

N

Requisites

Prerequisite: JAPAN 501 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

JAPAN 599 - Special Studies in Japanese**Credits 0-18**

Special Studies in Japanese

Note

Consent of department head and instructor.

Repeat for Credit

Y

Typically Offered

Other

KIN 100 - Adaptive Physical Activities**Credits 1**

Exercise programs adapted to the needs of the special student.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

KIN 101 - Topics in Strength and Conditioning**Credits 1**

Discussion of topics and participation in activities of

importance in strength and conditioning.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

KIN 102 - Topics in Aerobic Exercise

Credits 1

Discussion of topics and participation in activities of importance in aerobic exercise.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

KIN 104 - Swimming I

Credits 1

Beginning instruction for students who have no previous experience with swimming.

Repeat for Credit

N

Typically Offered

Fall, Spring

KIN 105 - Swimming II

Credits 1

For the beginning swimmer who has had some previous swimming experience.

Repeat for Credit

N

Typically Offered

Other

KIN 106 - Swimming III

Credits 1

Swimming III

Note

For students in the College of Health and Human Sciences, no more than 4 credit hours in lifetime sports and exercise activity classes may be applied toward a degree.

Repeat for Credit

N

Requisites

Prerequisite: KIN 105 or consent of instructor.

Typically Offered

Other

KIN 107 - Fitness Swimming

Credits 1

Fitness Swimming

Note

For students in the College of Health and Human Sciences, no more than 4 credit hours in lifetime sports and exercise activity classes may be applied toward a degree.

Repeat for Credit

N

Requisites

Prerequisite: KIN 106 or consent of instructor.

Typically Offered

Other

KIN 108 - Strength and Conditioning Specialist

Credits 2

Course prepares students for completion of exam required for Certified Strength and Conditioning Specialist (CSCS) credential from the National Strength and Conditioning Association.

Note

Online lecture/lab.

Repeat for Credit

N

Requisites

Prerequisite: KIN 220, KIN 335, Junior standing and

above.

Typically Offered

Summer

KIN 109 - Professional Development for Coaches

Credits 2

Principles of improving relationships, enhancing engagement and gaining trust of athletes through targeted communication.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 111 - Adaptive Training

Credits 2

Course covers techniques related to functional fitness classes for Adaptive Athletes including veterans, active duty personnel, and civilians alike.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 112 - Electrocardiography Technician Certification Preparation

Credits 2

Course presents an introductory overview related to the anatomy and physiology of the heart and explores normal electrical conduction as well as common variations as evidenced by changes in the waveform on the cardiac monitoring device. Focus on the student's ability to perform cardiac monitoring via 3, 5 and 12 lead monitoring devices and prepare students certification as an electrocardiography technician through the National Healthcareer Association.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 114 - Phlebotomy Certification Preparation

Credits 2

This course is designed to present students with an introduction to phlebotomy & infection control, legal issues, human anatomy & physiology, phlebotomy equipment & supplies, phlebotomy procedures, and phlebotomy fundamental essentials. Allows for preparation for the Certified Phlebotomy Technician certification exam offered by the National Healthcareer Association.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 160 - Aerobic Dancing and Exercise

Credits 1

Aerobic Dancing and Exercise

Note

For students in the College of Health and Human Sciences, no more than 4 credit hours in lifetime sports and exercise activity classes may be applied toward a degree.

Repeat for Credit

N

Typically Offered

Other

KIN 161 - Fitness and Conditioning

Credits 1

Fitness and Conditioning

Note

For students in the College of Health and Human Sciences, no more than 4 credit hours in lifetime sports and exercise activity classes may be applied toward a degree.

Repeat for Credit

Y

Typically Offered

Other

KIN 162 - Jogging**Credits 1**

Jogging

Note

For students in the College of Health and Human Sciences, no more than 4 credit hours in lifetime sports and exercise activity classes may be applied toward a degree.

Repeat for Credit

N

Typically Offered

Other

KIN 163 - Weight Training**Credits 1**

For students in the College of Health and Human Sciences, no more than 4 credit hours in lifetime sports and exercise activity classes may be applied toward a degree.

Repeat for Credit

Y

Typically Offered

Other

KIN 220 - Biobehavioral Bases of Physical Activity**Credits 4**

Current perspectives from the biological and behavioral domains of kinesiology will be used to explore the significance of physical activity for optimal health. Topics include physiology of physical activity, social and behavioral epidemiology of physical activity and health, control and biomechanics of human movement.

Note

Three hours of lecture and two hours of lab experiences.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Natural and Physical Sciences

KIN 230 - Introduction to Public Health**Credits 3**

An introductory survey course designed to provide a history of public health, an overview of the five core disciplines (epidemiology, biostatistics, environmental health, social and behavioral health, and health policy and management), and information about career options in public health. Investigation and analysis of contemporary issues in public health such as bioterrorism, threats to the nation's food supply, the importance of health promoting behaviors in the prevention of disease, distribution of infectious diseases on a global population, and the role of public health in disaster preparedness and management.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

FNDH 110

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

KIN 310 - Measurement and Research Techniques in Kinesiology**Credits 4**

Theory and techniques of measurement and research in the biological and behavioral aspects of kinesiology.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

KIN 312 - Methods and Analysis of Public Health

Credits 3

Introductory course on conducting and critiquing research in public health through fundamental principles of public health research methodologies. Skills developed include understanding ethical approaches to research and working with humans, and critically appraising data from scientific studies, understand materials and issues associated with the logic of the scientific method, research design, and qualitative and quantitative analysis.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

KIN 318 - Rural Community Health

Credits 3

Study of social, economic, political, and cultural influences that impact the health of individuals and families in rural communities with special focus on Kansas and the Midwest. Focuses on theories and concepts relevant to rural community health and their utility in designing rural public health interventions.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230.

Typically Offered

Fall, Spring

KIN 320 - Motor Learning and Development

Credits 3

Issues of motor learning and development as they relate to the application of instructional techniques.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

On sufficient demand

K-State 8

Natural and Physical Sciences

KIN 330 - Biomechanics

Credits 3

Mechanical and anatomical aspects of human movement. Kinematic and kinetic principles applied to the analysis of human movement.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: C or better in KIN 220; and a C or better in either KIN 360, or BIOL 441 and BIOL 442, or 8 hours of Anatomy and Physiology transfer credit.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

KIN 335 - Physiology of Exercise

Credits 4

The responses of the human body to exercise. Emphasis will be placed on understanding the structure-function relationships of the respiratory, cardiovascular, and muscular systems and how their function is integrated to support the dynamics of muscular contraction. Limitations to exercise performance will be examined in health and disease and the adaptability of the human body to physiological (i.e., exercise training) and environmental (e.g., hypoxia) stressors will be examined.

Note

Four hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: C or better in either KIN 360, or BIOL 441 and BIOL 442, or 8 hours of Anatomy and Physiology transfer credit.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

KIN 336 - Physiology of Exercise Lab**Credits 1**

A laboratory course to supplement the material of KIN 335.

Note

Two hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: KIN 335 or concurrent enrollment.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

KIN 345 - Exercise Behavioral Science**Credits 5**

Examination of the social and behavioral determinants of physical activity using a social ecological framework. Social ecological levels include individual, interpersonal, community, institutional and societal/policy factors.

Repeat for Credit

N

Requisites

Prerequisite: KIN 220, PSYCH 110; SOCIO 211 with a grade of C or better.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

KIN 346 - Laboratory Experience for Social and Behavioral Epidemiology of Public Health Physical Activity**Credits 1**

A laboratory experience for KIN 345.

Note

Two hours of contact time per week.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent enrollment in KIN 345.

Typically Offered

Other

K-State 8

Social Sciences

KIN 360 - Anatomy and Physiology**Credits 8**

Anatomy and Physiology of the organ systems of the human body. Laboratory includes physiology experiments, study of anatomy from computer simulation, dissection demonstrations, X-rays, and slide work.

Note

Five hours lecture and two three-hour lab sessions a week.

Repeat for Credit

N

Requisites

Prerequisite: C or better in either BIOL 198 or transferred introductory Biology credit.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

KIN 361 - Anatomy and Physiology I**Credits 4**

Rigorous, comprehensive study of human anatomy and physiology at the cellular, tissue, and organ systems level with an emphasis on the structure/function relationships of the integumentary, skeletal, muscular, and nervous systems.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 or equivalent with a grade of C or better.

Typically Offered

Fall, Spring, Summer

KIN 362 - Anatomy and Physiology II**Credits 4**

Rigorous, comprehensive study of human anatomy and physiology at the cellular, tissue, and organ systems level with an emphasis on the structure/function relationships of the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 or equivalent with grade of C or better and KIN 361.

Typically Offered

Fall, Spring, Summer

KIN 380 - Principles of Exercise Training**Credits 3**

This course is designed to cover the application of current scientific research on program design for healthy athletes competing in any sport or physically active individuals.

Contributing science include anatomy, biochemistry, biomechanics, endocrinology, nutrition, exercise physiology and psychology. Emphasis will be placed on adaptations to resistance training, plyometric training, speed/agility/speed endurance training and aerobic endurance training. Exercise Techniques, Testing and Evaluation and Program Design will also be major components of the course. Students should be prepared for strenuous physical activity.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 381 - Exercise and Chronic Disease**Credits 3**

Focus on the epidemic of chronic disease impacting society and the benefits/use of exercise as a therapy for selected diseases.

Repeat for Credit

N

Requisites

Prerequisite: KIN 335 with a grade of C or better.

Typically Offered

Fall, Spring, Summer

KIN 382 - Strength and Conditioning for Performance**Credits 3**

Examine relationship of imposed physical demands (stress) on physiological adaptation. Both the mechanisms of adaptation and the methods used to impose desired adaptations will be investigated. Focus on performance outcomes including strength training, power training (RFD), speed training, and endurance training.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 383 - Exercise and Older Adults

Credits 3

Examines the relationship between exercise and the aging process. Specific focus will be on the impacts of aging on the organ systems of the human body, the extent to which exercise may beneficially impact this process, and methodology for assessment of fitness and prescription of exercise in the older adult population

Repeat for Credit

N

Requisites

Prerequisite: KIN 220 with a C or better.

Typically Offered

Fall, Spring, Summer

KIN 384 - Certifications in Health and Fitness**Credits 3**

Examine careers and certifications available within the field of Kinesiology/Applied Fitness.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 385 - Fundamentals of Health and Fitness**Credits 3**

Examine human behavior and exercise as the forefront of discussions about health. Examine relationship between health behavior, exercise, inactivity, and fitness adaptations.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 386 - Pediatric Physical Activity, Exercise & Sport**Credits 3**

Introduction to physiological and behavioral exercise considerations for a holistic approach to increasing activity levels effectively and safely in the pediatric population. Prepares students planning to work with healthy to obese 3-17 year olds in physical activity, exercise, and sport to encourage lifelong physical activity adherence and obesity reduction.

Repeat for Credit

N

Requisites

Prerequisite: KIN 220

Typically Offered

Summer

KIN 387 - Introduction to Integrative Human Pathophysiology**Credits 3**

Focus on the main mechanisms that lead to organ and system dysfunction. The basic processes covered will highlight some common diseases, rather than covering an exhaustive list of known diseases

Repeat for Credit

N

Requisites

Prerequisite: C or better in either KIN 360 or BIOL 441 and BIOL 442; or 8 hours of Anatomy and Physiology transfer credit at C or better.

Typically Offered

Fall, Spring, Summer

KIN 398 - Topics in Kinesiology**Credits 1-3**

Study of a selected topic in an area not covered in the curriculum or involving application of theory presented in a related subject core course.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

KIN 418 - Social Determinants and Diversity in Public Health

Credits 3

Examination of social determinants of health such as class, race, and gender, and an exploration of how social inequalities have contributed to differences in health among certain population groups. Topics addressed include immigration patterns, social justice, health equity, and promoting cultural competency.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230; SOCIO 211.

Typically Offered

Fall, Spring

KIN 419 - Health Policy and Administration

Credits 3

Provides understanding of health policy issues at the local, state, federal, and global levels, with focus on U.S. health policy-making and law including health insurance, health economics, legal system, health policy and law including health insurance, health economics, individual rights in health care, and health care access and quality.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230.

Typically Offered

Fall, Spring

KIN 430 - Practicum in Lifetime Sports

Credits 2

Supervised students assist in lifetime sports classes.

Note

Four hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and consent of Undergraduate Coordinator.

Typically Offered

Fall, Spring

KIN 463 - Laboratory Practicum in Kinesiology

Credits 1-2

Supervised students assist in laboratory.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and successful completion of lab experience, consent of undergraduate coordinator.

Typically Offered

Fall, Spring

KIN 498 - Honors Tutorial in Kinesiology

Credits 1-3

Individually directed research in kinesiology, normally as a preliminary to writing a senior honors thesis.

Repeat for Credit

Y

Requisites

Prerequisite: Sophomore standing, membership in the honors Program of the College of Health and Human Sciences, and permission of instructor.

Typically Offered

Fall, Spring

KIN 499 - Honors Project

Credits 3

Open only to Health and Human Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Requisites

Prerequisite: Membership in Human Ecology Honors Program.

Typically Offered

Fall, Spring, Summer

KIN 520 - Practicum in Fitness Settings**Credits 1-3**

Practical experiences in the fitness setting such as observation and participation in exercise testing and prescription, exercise leadership, and record keeping and program management.

Note

Consent of School required

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 521 - Practical Experiences in Public Health Physical Activity**Credits 1-3**

Practical experiences in the public health setting, such as observation and participation in public health physical activity program planning and evaluation.

Repeat for Credit

N

Requisites

Prerequisite: C or better in both KIN 310 and KIN 345 and instructor consent.

Typically Offered

Fall, Spring, Summer

KIN 550 - Health Promotion Practice Methods**Credits 4**

A health promotion course in which the role of a public health professional in community-based program planning

will be discussed including the steps of a needs assessment. Additionally, students will learn various intervention strategies that can be used in the public health field to promote health. Major concepts, theories, and principles of health promotion/education and intervention strategies will form the foundation of this class. Cultural, social, and developmental influences on health behavior will also be explored.

Repeat for Credit

N

Requisites

Prerequisite: KIN 418

Typically Offered

Fall

KIN 580 - Internship in Kinesiology**Credits 3-8**

Supervised field experience in approved fitness, strength and conditioning, clinical, public health, or healthcare setting 3-8 credit hours, 50 hours required at the internship site per credit.

Note

May be completed with half-time assignment for 12-16 weeks or full-time assignment for 6-8 weeks. Consent of School required.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 591 - Psychology of Exercise and Sport Injury**Credits 3**

Underlying effects, treatment of psychological consequences, and physical trauma of exercise and sport injury. Topics include the impact of injury on exercise behavior, the athlete at risk, behavioral risk factors, injury assessment, treatment of injury, and psychological factors addressed by the sports medicine team.

Repeat for Credit

N

Typically Offered

Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

KIN 592 - Sport and Exercise Personality**Credits 3**

Intersession only The role of personality in sport, sport performance and exercise behavior. Theories relevant to sport and exercise personality will be examined to provide a theoretical framework for understanding and applying research. Assessment instruments and relevant research will be examined and critiqued.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 310 and KIN 345.

Typically Offered

Intersession

KIN 594 - Sport and Exercise Psychology**Credits 3**

This course is designed to introduce the student to the basic psychological principles related to sport and exercise behavior and performance. Factors that influence sport performance will be examined as will the principles related to exercise and exercise behavior.

Repeat for Credit

N

Typically Offered

Spring, Summer

KIN 596 - Teaching Experience in Kinesiology**Credits 3**

This course will be a learning experience for students supporting a faculty course. Objectives include identifying and discussing learning and teaching, leading discussions,

and providing assistance and direction to students in the course.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

KIN 597 - Research Experience in Kinesiology**Credits 0-3**

Exposure to and assisting with current research projects in a laboratory setting in Kinesiology.

Note

Consent of School required. Maximum of 3 credit hours applicable toward a degree.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

KIN 598 - Topics in Kinesiology**Credits 1-3**

Study of a selected topic in Kinesiology involving either an in-depth study or application of theory presented in a related core course.

Repeat for Credit

Y

Requisites

Prerequisite: Related core course.

Typically Offered

On sufficient demand

KIN 599 - Independent Studies in Kinesiology**Credits 1-3**

Selected topics in kinesiology. Maximum of 3 hours applicable towards a degree.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring

KIN 600 - Interpersonal Aspects of Physical Activity**Credits 3**

Examination of theory and research related to interpersonal aspects of physical activity. Topics include: social networks, social support, social influence, cohesion and intervention strategies that target interpersonal factors to increase and maintain physical activity participation.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in KIN 310 and KIN 312; and a grade of C or better in KIN 345.

Typically Offered

Fall, Spring

KIN 601 - Cardiorespiratory Physiology**Credits 3**

An examination of the structure and function of the respiratory system and the manner in which oxygen passes from the atmosphere to its site of utilization in the mitochondria. Exercise, disease, and environmental stresses will form the basis for examining the capacity, plasticity, and limitations to respiratory function.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in both KIN 310 and KIN 335.

Typically Offered

Spring-Odd Years

KIN 602 - Social Structural Determinants of Physical Activity**Credits 3**

An examination of how social structural determinants impact participation in physical activity. Topics include: social class, race and ethnicity, gender, sexual orientation, family, education and work. Promising physical activity intervention strategies are also discussed.

Repeat for Credit

N

Requisites

Prerequisite: grade of C or better in KIN 310 or Kin 312; and a grade of C or better in KIN 345.

Typically Offered

Fall

KIN 603 - Cardiovascular Physiology**Credits 3**

Study of the structure and function of the cardiovascular system as it pertains to health and disease. Topics include the control of blood pressure, vascular volume, and blood flow during orthostasis, aging and disease.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in both KIN 310 and KIN 335.

Typically Offered

Spring

KIN 605 - Topics in the Biological Basis of Kinesiology**Credits 1-3**

Study of a selected topic in the biological basis of kinesiology involving either an in-depth study or application of theory presented in a related course area.

Repeat for Credit

Y

Requisites

Prerequisite: A grade of C or higher in KIN 310 and KIN 335.

Typically Offered
On sufficient demand

KIN 606 - Topics in the Behavioral Basis of Kinesiology

Credits 1-3

Study of a selected topic in the behavioral basis of kinesiology involving either an in-depth study or application of theory presented in a related course area.

Repeat for Credit
Y

Requisites
Prerequisite: A grade of C or higher in KIN 310 and KIN 345.

Typically Offered
On sufficient demand

KIN 607 - Muscle Physiology

Credits 3

Subcellular, cellular, and tissue structure of skeletal muscle and the relationship of these structural characteristics to the functioning of the muscle. Examines energy pathways available to the muscle to support the various functions, and mechanisms underlying changes in exercise tolerance that accompany exercise training and detraining, aging, and diseases that affect skeletal muscle.

Repeat for Credit
N

Requisites
Prerequisite: A grade of C or higher in both KIN 310 and KIN 335.

Typically Offered
Fall

KIN 609 - Environmental Physiology

Credits 3

Study of the physiological adaptations to acute and chronic challenges imposed by the environment. Topics will focus on how different physiological systems respond to different environmental stressors (heat, cold, deep sea diving, high altitude).

Repeat for Credit
N

Requisites
Prerequisite: C or better in both KIN 310 and KIN 335.

Typically Offered
Spring

KIN 610 - Program Planning and Evaluation

Credits 3

Theories and models and the stages and activities of planning, implementing, and evaluating health promotion programs.

Repeat for Credit
N

Requisites
Prerequisite: grade of C or better in KIN 310 or KIN 312; and a grade of C or better in KIN 345.

Typically Offered
Spring

KIN 611 - Autonomic Neurophysiology

Credits 3

Study of the structure and function of the autonomic nervous system primarily as it pertains to physical stress. Particular emphasis is placed on the mechanisms evoking changes in the autonomic nervous system during physical stress including feed-forward and feedback autonomic control signals. The effects of disease and exercise training on those neural control signals are discussed

Repeat for Credit
N

Requisites
Prerequisite: C or better in both KIN 310 and KIN 335

Typically Offered
Fall, Summer

KIN 612 - Policy, Built Environment and Physical Activity

Credits 3

Examination of the characteristics of active living policies and neighborhood/community design that contribute to improved health.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in KIN 310 or KIN 312; and a grade of C or better in KIN 345.

Typically Offered

Fall, Summer

**KIN 614 - Physical Activity Behavior
Settings: Youth Sport to Senior Centers****Credits 3**

The course is a study of key physical activity behavior settings across life-span development. Topics include observation of social and physical environmental variables, surveillance of physical activity in behavior settings, motivational theory and responses, setting interventions and developmental outcomes, and intervention evaluation methods.

Repeat for Credit

N

Requisites

Prerequisite: KIN 310 and KIN 345 with grades of C or higher.

Typically Offered

Spring

**KIN 615 - Cardiorespiratory/Comparative
Physiology in Health and Disease****Credits 3**

This course seeks to fulfill the following objectives: (1) To provide the student with an awareness and mechanistic understanding of the effects of physical activity on humans and animals and the concept of homeostasis. (2) Foster an understanding of the integrative nature of kinesiology/physiology by considering the relationships among different systems and their response to stress in humans and animal species in health and disease. Focus is brought to bear in particular on the pulmonary,

cardiovascular and muscle systems. Chronic and acute adaptations to special environments and physical stress are considered and the students are asked to consider how the different systems are controlled in health and disease. This course is recommended for pre-med students, biology and physiology majors, aspiring scientists in physiology and/or medicine and those interested in a career in health and human services.

Repeat for Credit

N

Requisites

Prerequisite: C or better in both KIN 310 and KIN 335

Typically Offered

Fall, Spring, Summer

**KIN 616 - Obesity and Physical Activity:
Behavioral, Environment, and Policy
Influences****Credits 3**

Examines the contributing factors to obesity, especially through the lens of physical activity/inactivity. Attention is paid to the environment and policy influences on behaviors that contribute to weight gain.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in KIN 310 or KIN 312 and a Grade of C or better in KIN 345.

Typically Offered

Fall, Spring

KIN 617 - Signaling Pathways in Physiology**Credits 3**

Current concepts of biological signaling transduction and its role in controlling genes expression and protein synthesis involved in exercise adaptation, including resistance and endurance exercise, and disease states, including cardiovascular disease and cancer. This course seeks to fulfill the following objectives: (1) To train students to understand the molecular and cellular signaling mechanisms associated with changes in skeletal and cardiac muscle mass, cardiac function, and endothelial function change in response to exercise and disease. (2) Foster an

understanding of the correlation of 'macro-level' concepts like muscle hypertrophy to 'micro-level' concepts such as mTOR signaling with the goal of understanding the role cell signaling plays in mediating chronic adaptation. This course is recommended for pre-med students, pre-physical therapy students, biology and physiology majors, and those interested in a career in health and human services. This course will cover concepts that are of emphasis of the MCAT exam.

Repeat for Credit

N

Requisites

Prerequisite: C or better in both KIN 310 and KIN 335; or Instructor Permission

Typically Offered

Fall, Spring

KIN 618 - Seminar Public Health Practice**Credits 1**

Pre-practicum course of field-based observations and experiences to connect academic concepts to practice in public health culminating in a portfolio to showcase accomplishments to prospective employers and peers.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230.

Typically Offered

Fall, Spring

KIN 619 - Public Health Practicum**Credits 3**

Course provides students with an opportunity to synthesize, integrate, and apply practical skills, knowledge, and training learned in courses, to gain professional experience in a public health work environment, and to work on public health practice projects that are of particular interest.

Repeat for Credit

N

Requisites

Prerequisite: KIN 230, KIN 312, and KIN 618 with a grade

of C or higher; and permission of public health-coordinator.

Typically Offered

Fall, Spring

KIN 622 - Capstone Project in Public Health**Credits 2**

Focuses on integrating public health knowledge, skills, and practice acquired during coursework and the practicum experience, and culminating in a paper and presentation demonstrating critical thinking on public health topics and further understanding in an area of public health practice. This course is typically completed in the last semester of the undergraduate public health program.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in KIN 230; KIN 618, and KIN 619.

Typically Offered

Fall, Spring, Summer

KIN 625 - Exercise Testing and Prescription**Credits 3**

Benefits and risks of exercise testing and prescription with healthy populations, individuals at risk, and patients with cardiovascular and metabolic diseases. Includes experiences with exercise test technology and methods of exercise prescription.

Note

Two hours recitation and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: C or better in both KIN 310 and KIN 335, CPR, and First Aid.

Typically Offered

Fall, Spring

KIN 635 - Nutrition and Exercise

Credits 3

The interrelationships between diet, nutrition, and exercise. Topics covered include physical fitness, weight control, nutrient metabolism during exercise, and athletic performance.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 132 or FNDH 400 and a grade of C or higher in KIN 310 and KIN 335

Typically Offered

Fall

KIN 650 - Development of Motor Control**Credits 3**

A multi-level analysis of the neurophysiological activation of muscle, reflexes, sensory integration during movement, and theories of voluntary movement.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: C or better in both KIN 310 and either BIOL 340, KIN 360 or 8 hours of transfer anatomy and physiology.

Typically Offered

On sufficient demand

KIN 655 - Individual Physical Activity Promotion**Credits 3**

An in-depth study of individual-level influences on physical activity and strategies to promote physical activity among individuals.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in KIN 310 or KIN 312;

and a grade of C or better in KIN 345.

Typically Offered

Fall, Spring

KIN 657 - Integrative Human Pathophysiology**Credits 3**

This course is designed to introduce the student to the mechanistic pathways of prominent chronic diseases (e.g., cardiovascular, respiratory, renal, cancer) and the mechanistic basis for current recommended treatments. This course will focus on the vertical integration of cardiovascular, renal, respiratory, and neural physiological pathways as they relate to pathogenesis, diagnosis, and treatment of these chronic diseases. A large emphasis will be placed on the cellular and molecular response, how they manifest in histological analysis and subsequent organ system dysfunction with the role of exercise therapy (example: cardiac/respiratory therapy) and pharmacology in mitigating these physiological changes.

Repeat for Credit

N

Requisites

Prerequisite: A grade of C or higher in both KIN 310 and KIN 335.

Typically Offered

Fall, Spring

KIN 700 - Interpersonal Aspects of Physical Activity**Credits 3**

Examination of theory and research related to interpersonal aspects of physical activity. Topics include: social networks, social support, social influence, cohesion, and intervention strategies that target interpersonal factors to increase and maintain physical activity participation.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission

Typically Offered

Spring

KIN 701 - Cardiorespiratory Physiology**Credits 3**

An examination of the structure and function of the respiratory system and the manner in which oxygen passes from the atmosphere to its site of utilization in the mitochondria. Exercise, disease, and environmental stresses will form the basis for examining the capacity, plasticity, and limitations to respiratory function.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 335 with a grade of C or better

Typically Offered

Spring

KIN 703 - Cardiovascular Physiology**Credits 3**

Study of the structure and function of the cardiovascular system as it pertains to health and disease. Topics include the control of blood pressure, vascular volume, and blood flow during orthostasis, aging and disease.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 335 with a grade of C or better

Typically Offered

Fall, Spring

KIN 707 - Muscle Physiology**Credits 3**

Subcellular, cellular, and tissue structure of skeletal muscle and the relationship of these structural characteristics to the functioning of the muscle. Examines energy pathways available to the muscle to support the various functions, and mechanisms underlying changes in exercise tolerance that accompany exercise training and detraining, aging, and diseases that affect skeletal muscle.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 335 or equivalent with a grade of C or better

Typically Offered

Fall, Spring, Summer

KIN 709 - Environmental Physiology**Credits 3**

Study of the physiological adaptations to acute and chronic challenges imposed by the environment. Topics will focus on how different physiological systems respond to different environmental stressors (heat, cold, deep sea diving, high altitude).

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 335 with a grade of C or better

Typically Offered

Fall, Spring

KIN 710 - Program Planning and Evaluation**Credits 3**

Theories and models and the stages and activities of planning, implementing, and evaluating health promotion programs.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 345 with a grade of C or better

Typically Offered

Spring

KIN 711 - Autonomic Neurophysiology

Credits 3

Study of the structure and function of the autonomic nervous system primarily as it pertains to physical stress. Particular emphasis is placed on the mechanisms evoking changes in the autonomic nervous system during physical stress including feed-forward and feedback autonomic control signals. The effects of disease and exercise training on those neural control signals are discussed.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 335 with a grade of C or better

Typically Offered

Fall, Summer

KIN 712 - Policy, Built Environment and Physical Activity

Credits 3

Examination of the characteristics of active living policies and neighborhood/community design that contribute to improved health.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 345 with a grade of C or better

Typically Offered

Fall, Summer

KIN 715 - Cardiorespiratory/Comparative Physiology in Health and Disease

Credits 3

This course seeks to fulfill the following objectives: (1) To provide the student with an awareness and mechanistic understanding of the effects of physical activity on humans and animals and the concept of homeostasis. (2) Foster an understanding of the integrative nature of kinesiology/physiology by considering the relationships among different systems and their response to stress in humans and animal species in health and disease. Focus is brought to bear in particular on the pulmonary, cardiovascular and muscle systems. Chronic and acute adaptations to special environments and physical stress are considered and the students are asked to consider the the different systems are controlled in health and disease. This course is recommended for pre-med students, biology and physiology majors, aspiring scientists in physiology and/or medicine and those interested in a career in health and human services.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission OR KIN 335 with a grade of C or better

Typically Offered

Fall

KIN 716 - Obesity and Physical Activity: Behavioral, Environment, and Policy Influences

Credits 3

Examines the contributing factors to obesity, especially through the lens of physical activity/inactivity. Attention is paid to the environment and policy influences on behaviors that contribute to weight gain.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission

Typically Offered

Fall, Summer

KIN 755 - Individual Physical Activity Promotion**Credits 3**

An in-depth study of individual-level influences on physical activity and strategies to promote physical activity among individuals.

Note

Intended for graduate students only

Repeat for Credit

N

Requisites

Prerequisite: Graduate student status OR instructor permission

Typically Offered

Fall, Spring

KIN 780 - Graduate Internship in Kinesiology**Credits 3-6**

Supervised field experience in approved fitness, strength and conditioning, clinical, public health, or healthcare setting 3-8 credit hours, 50 hours required at the internship site per credit.

Note

Consent of School required.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

KIN 793 - Internship/Public Health Physical Activity**Credits 1-8**

Supervised field experience in settings such as public health departments, foundations, government offices, or research programs.

Repeat for Credit

N

Requisites

Prerequisite: KIN 345, KIN 346, KIN 521, KIN 655.

Typically Offered

Fall, Spring, Summer

KIN 796 - Topics in Exercise Physiology**Credits 3**

Selected topics in exercise physiology involving either greater in-depth study or application of theory presented in a related course.

Repeat for Credit

Y

Requisites

Prerequisite: C or better in both KIN 310 and KIN 335 and consent of instructor.

Typically Offered

On sufficient demand

Crosslisted

AP 796

KIN 797 - Topics in Public Health Physical Activity Behavior**Credits 3**

Selected topics in public health physical activity behavior

involving either greater in-depth study or application of theory presented in a related course.

Repeat for Credit

Y

Requisites

Prerequisite: C or better in both KIN 310 and KIN 345 and consent of instructor.

Typically Offered

On sufficient demand

KIN 800 - Advanced Physiology of Exercise

Credits 3

An in-depth study of the physiological responses of the human body during exercise, the adaptations that occur with exercise training, and the laboratory techniques to assess these responses and adaptations.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 335.

Typically Offered

Fall

Crosslisted

Anatomy and Physiology See AP 800

KIN 801 - Physical Activity: Physiology to Public Health Impact

Credits 3

This graduate seminar covers the study of physical activity and its impact on public health across levels of analysis from basic exercise physiology to social ecology.

Repeat for Credit

N

Typically Offered

Fall

KIN 805 - Physical Activity and Human Behavior

Credits 3

An examination of the theory and research related to the psychological antecedents and outcomes of participation in physical activity and exercise. Topics include models of exercise motivation, social cognitive theory of exercise and social ecological models of physical activity.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 655.

Typically Offered

Fall

KIN 807 - Motor Learning and Control

Credits 3

Application of learning principles to skill acquisition in sport and human domain; and practical applications.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 320 or 9 hours of graduate credit in psychology (500 level or above).

Typically Offered

Fall

KIN 808 - Social Epidemiology of Physical Activity

Credits 3

An examination of the social factors that contribute to an understanding of why people participate in physical activity. Topics include the consideration of individual social and demographic factors such as gender, race, socioeconomic status, education, and social support as well as social structural factors such as the role of the social institutions (e.g. family, work and school environments).

Repeat for Credit

Y

Requisites

Prerequisite: KIN 655.

Typically Offered

Fall

KIN 815 - Research Methods in Kinesiology**Credits 3**

A study of techniques of the research process including the identification of a research problem, the design of experimental and non-experimental strategies, and the presentation of written research.

Repeat for Credit

Y

Typically Offered

Spring

KIN 818 - Social and Behavioral Bases of Public Health**Credits 3**

The role of behavioral, social, psychological, economic, environmental, and social structural factors in both the occurrence of health problems in groups and populations, and in the development of the risk factors that contribute to these problems. Principles of health behavior change and the application of these principles to a variety of health issues as well as an emphasis on how social structural factors impact health are examined to better understand health behavior and health inequities in contemporary society.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate status in public health or kinesiology program.

Typically Offered

Fall

Crosslisted

MPH 818

KIN 822 - Advanced Muscle Physiology**Credits 3**

Course will examine current topics in muscle physiology. Format to include discussion of scientific

papers, oral presentations, and debate of controversial topics.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 335 or permission of instructor

Typically Offered

Spring

KIN 824 - Physiology of Oxygen Transport**Credits 3**

This course is designed to promote critical reading of the literature, particularly with respect to the understanding of exercise physiology and cardiorespiratory, vascular and muscle energetics responses. Activities will include presenting papers, debate and discussion regarding all aspects of science and scientific philosophy.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 335 or permission of instructor

Typically Offered

Spring

KIN 825 - Mechanical Analysis of Human Movement**Credits 3**

Mechanical principles and analysis procedures for the study of overt human movement. Applications to movements in exercise, sport, occupational, and daily living activities will be emphasized.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 330.

Typically Offered

Spring

KIN 826 - Advanced Cardiovascular Physiology

Credits 3

Discussion and critical examination of cardiovascular control mechanisms, with specific emphasis on regulation of blood pressure during severe challenges such as exercise, heat stress, and upright posture.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 335 or permission of instructor

Typically Offered

Fall

KIN 830 - Advanced Public Health Physical Activity**Credits 3**

Exploration of the social and behavioral epidemiology of physical activity in public health: outcomes, influences, and promotion in individuals, settings, and communities.

Repeat for Credit

Y

Typically Offered

Spring

KIN 835 - Group Dynamics and Physical Activity**Credits 3**

Examines the principles of group development and maintenance in physical activity environments. Topics include the nature of groups, group environment, important member attributes, group structure, group cohesion, group processes and tactics of group development.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 655.

Typically Offered

Spring

KIN 840 - Public Health Practice**Credits 3-6**

Supervised field experience in an international, state, local, or district health agency or other appropriate health agency.

Repeat for Credit

N

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

KIN 845 - Exercise Adherence**Credits 3**

Study and discussion of empirical research and theory as it relates to exercise adherence from psychological, behavioral, and public health perspectives. Topics addressed are epidemiological trends, conceptual issues of measurement, research design, statistical analysis, and interventions focusing on settings and populations.

Repeat for Credit

N

Requisites

Prerequisite: KIN 600 or KIN 805.

Typically Offered

Spring

KIN 851 - Topics in the Physiological Basis of Kinesiology**Credits 1-3**

Study of a selected topic in the physiological basis of kinesiology involving either an in-depth study or application of theory presented in a related course area.

Repeat for Credit

Y

Typically Offered

On sufficient demand

KIN 852 - Topics in the Behavioral Basis of Kinesiology

Credits 1-3

Study of a selected topic in the behavioral basis of kinesiology involving either an in-depth study or application of theory presented in a related course area.

Repeat for Credit

Y

Typically Offered

On sufficient demand

KIN 855 - Exercise Psychology in Special Populations**Credits 3**

A study of the psychological determinants and outcomes of exercise participation in special populations (e.g. arthritic, obese, cardiovascular disease). Emphasis in understanding the motive underlying involvement in exercise and physical activity and the situational and personal determinants associated with failure to initiate and/or adhere to exercise and physical activity programs.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 655.

Typically Offered

Fall

KIN 890 - Graduate Seminar in Kinesiology**Credits 1**

Designed to provide students opportunities to improve oral and written communication skills and to expose them to the breadth of research topics within the Kinesiology department.

Repeat for Credit

Y

Requisites

Prerequisites: Current graduate student status (MS, PhD, MPH). Undergraduate students by instructor permission only.

Typically Offered

Fall, Spring

KIN 896 - Independent Study in Kinesiology**Credits 1-4**

Intensive independent study in a topic or problem involving the integration, application, and synthesis of theory presented in a related course. The course culminates in the preparation of an original paper.

Repeat for Credit

Y

Requisites

Prerequisite: KIN 815 and related graduate subject core courses.

Typically Offered

Fall, Spring, Summer

KIN 897 - Research in Kinesiology**Credits 1-4**

Independent study in one or more of the research processes involved in the scientific method.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 702 or STAT 703, KIN 815, and related graduate subject core course.

Typically Offered

Fall, Spring, Summer

KIN 898 - Master's Report**Credits 1-4**

Master's Report

Repeat for Credit

Y

Typically Offered

Other

KIN 899 - Master's Thesis**Credits 1-6**

Master's Thesis

Repeat for Credit

Y

Typically Offered

Other

KIN 999 - Dissertation Research

Credits 1-15

Dissertation Research

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

LAR 010 - Travel: Regional 1

Credits 0

Multi-day regional field trip experience. Students will study existing natural and/or built environments to develop landscape architecture knowledge base and apply findings to other courses.

Repeat for Credit

Y

Requisites

Prerequisite: LAR 220.

Typically Offered

Spring, Summer

LAR 020 - Travel: Regional 2

Credits 0

Multi-day field trip experience in an urban environment. Students will study notable works of landscape architecture, and visit professional offices to develop landscape architecture knowledge base and apply findings to other courses.

Repeat for Credit

N

Requisites

Prerequisite: LAR 010.

Corequisite: LAR 433.

Typically Offered

Spring

LAR 030 - Travel: Narratives and Placemaking

Credits 0

Immersive field trip experience that supports the Narrative and Placemaking Studio.

Repeat for Credit

N

Requisites

Prerequisite: LAR 020.

Corequisites: LAR 425, LAR 430, LAR 352.

Typically Offered

Summer

LAR 040 - Travel: Major City 1

Credits 0

Multi-day field trip experience in a major city. Students will study notable works of landscape architecture, and visit professional offices to develop landscape architecture knowledge base and apply findings to other courses.

Repeat for Credit

N

Requisites

Prerequisite: LAR 030.

Corequisite: LAR 442.

Typically Offered

Fall

LAR 050 - Travel: Major City 2

Credits 0

Multi-day field trip experience in a major city. Students will study notable works of landscape architecture, and visit professional offices to develop landscape architecture knowledge base and apply findings to other courses.

Repeat for Credit

N

Requisites

Prerequisite: LAR 040.

Typically Offered

Spring

LAR 101 - Introduction to Landscape Architecture**Credits 3**

Exploratory lecture course open to students in all majors providing an overview of landscape architecture which focuses on innovations in natural and built environments. Students will learn about a wide variety of global issues and perspectives, types of planning and design projects, and professional aspects of the discipline.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Aesthetic Interpretation

LAR 211 - Unlocking Creativity**Credits 3**

Do you want to become creative? Good news, you already are! For students in all majors, this course is designed to help you access your creative potential and become more imaginative, innovative, and courageous. Learning outcomes include overcoming blocks, refining your creative process, practicing activities to enhance creativity, and effectively communicating ideas.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

LAR 220 - Drawing Landscapes Studio**Credits 5**

Foundational aspects of 2D analog and digital medium. Students will learn how to view, analyze, represent and design through the lens of landscape architecture.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the LA professional program.

Corequisite: LAR 350.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

LAR 230 - Modeling Landscapes Studio**Credits 5**

Foundational aspects of 3D modeling using both analog and digital medium. Students will learn how to view, analyze, represent and design through creation and fabrication of 3D models.

Repeat for Credit

N

Requisites

Prerequisite: LAR 220.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

LAR 248 - Landscape Architecture Materials and Methods**Credits 3**

To provide the student a basic understanding of materials and methods commonly utilized in the practice of landscape architecture as a basis to pursue subsequent land design and land construction course work.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 113, PHYS 115 or PHYS 213.

Prerequisite or co-requisite: LAR 520.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

LAR 298 - Ethics and Environmental Dilemmas**Credits 3**

Introduction to environmental ethics and significant local and global dilemmas. Students will learn about how humans have impacted the environment through time and the implications of those actions, and environmental/social movements and justice.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

LAR 310 - Design Graphics and Visual Thinking**Credits 2**

A study of graphic communication techniques for the exploration and presentation of landscape architecture design ideas.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the LA professional program.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

LAR 320 - Site Design Studio II**Credits 5**

Small- to medium-scale site design studies with emphasis placed on design process, response to cultural and natural conditions, detailed articulation of space including definition and use of materials, and design communication.

Repeat for Credit

N

Requisites

Prerequisite: LAR 220. Prerequisite or corequisite: LAR 520.

Typically Offered

Spring

K-State 8

Historical Perspectives

LAR 350 - Plants and Design**Credits 3**

Introduction to plant morphology, forms of classification, and a basic understanding of plant habitat. Students will learn to identify a palette of plants in the field and understand their application for design.

Repeat for Credit

N

Requisites

Corequisite: LAR 220.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Natural and Physical Sciences

LAR 351 - Plant Patterns and Use

Credits 1

Introduction to the patterns and use of plants in cultural and natural contexts. Students will identify plant palettes and communities in historical and contemporary landscapes.

Repeat for Credit

N

Requisites

Prerequisite: LAR 350.

Corequisite: LAR 433.

Typically Offered

Spring

LAR 352 - Landscape Performance Lab**Credits 3**

Introduction to the scientific process as well as methods for assessing landscape performance. Students will learn how to acquire, organize and analyze information using qualitative and quantitative methods.

Repeat for Credit

N

Requisites

Prerequisite: LAR 298, LAR 420

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Empirical and Quantitative Reasoning

LAR 353 - Plant Selection**Credits 1**

Selection of plants for specific site requirements. Students learn how to anticipate plant performance and identify plants to achieve design goals in associated courses.

Repeat for Credit

N

Requisites

Prerequisite: LAR 352.

Typically Offered

Fall

LAR 354 - Landscape Restoration**Credits 3**

Development of landscape restoration plans. Students will learn the principles, methods, and plants of ecological restoration at local and regional scales.

Repeat for Credit

N

Typically Offered

Spring

LAR 410 - Planting Design Studio**Credits 5**

Design studies emphasizing functional, aesthetic, and ecological uses of plants. Projects emphasize design process and the relationship between plants and the built environment; elements and principles of planting design; plant selection; preparation of planting plans; specification writing; and design implementation.

Repeat for Credit

N

Requisites

Prerequisite: LAR 320. Prerequisite or corequisite: LAR 520, HORT 274.

Typically Offered

Fall

LAR 420 - Socio-Ecological Systems Studio**Credits 5**

Introduction to key principles of ecology as related to ecological planning and design. Students will learn how to connect theoretical knowledge of socio-ecological systems and processes to address multi-scale problems in urban and rural contexts.

Repeat for Credit

N

Requisites

Prerequisite: LAR 230.

Typically Offered
Fall

LAR 425 - Narratives and Placemaking Seminar

Credits 2

Immersive exploration into fundamentals of landscape narratives, place theory and placemaking. Students will examine and engage in a variety of locations, create expressions of narrative using a variety of representational techniques, and apply knowledge gained in site design.

Repeat for Credit
N

Requisites
Prerequisite: LAR 420.
Corequisite: LAR 030, LAR 352.

Typically Offered
Summer

LAR 430 - Narratives and Placemaking Studio

Credits 4

Immersive exploration into fundamentals of landscape narratives, place theory and placemaking. Students will examine and engage in a variety of locations, create expressions of narrative using a variety of representational techniques, and apply knowledge gained in site design.

Repeat for Credit
N

Requisites
Prerequisite: LAR 420.
Corequisite: LAR 030, LAR 352, LAR 425.

Typically Offered
Summer

LAR 433 - Landscape History and Design Studio

Credits 5

Introduction to the history and theory of landscape

architecture materials and design from the Middle Ages to the present with a focus on Europe and North America. Students will gain competency in landscape architecture vocabulary, the ability to recognize notable works and practitioners, and apply historical precedents to site design projects.

Repeat for Credit
N

Requisites
Prerequisite: LAR 230.
Corequisite: LAR 351.

Typically Offered
Fall

LAR 438 - Site Design Implementation

Credits 5

Introduction to construction materials, methods, and documentation appropriate for design implementation at the site scale. Focus on producing a set of construction documents including grading, stormwater management, plants and materials.

Repeat for Credit
N

Requisites
Prerequisite: LAR 425, LAR 430.
Corequisite: LAR 353.

Typically Offered
Fall

LAR 439 - Master Plan Design and Implementation

Credits 5

Design implementation at the master plan and regional scales. Focus on suitability analyses and systems supporting community services such as pedestrian and vehicular transportation, land use, hydrology and other natural systems.

Repeat for Credit
N

Requisites
Prerequisite: LAR 438.

Corequisite: LAR 354.

Typically Offered

Spring

LAR 442 - Site Research and Design Studio

Credits 5

Iterative development of site plans and designs. Students will research and share precedent studies to expand knowledge base, and will apply findings to multiple design projects.

Repeat for Credit

N

Requisites

Prerequisite: LAR 352, LAR 425, LAR 430.

Corequisite: LAR 040.

Typically Offered

Fall

LAR 444 - Career and Academic Planning

Credits 3

Exploration and identification of career paths and development of academic plans for reaching personal and professional goals including specific coursework, internships, study abroad and extracurricular activities.

Repeat for Credit

N

Requisites

Prerequisite: LAR 430.

Typically Offered

Fall

LAR 445 - Career Development Communications

Credits 1

Development of visual, written and oral communication skills for career development. Students will prepare materials for internship application, job search, or career advancement.

Repeat for Credit

N

Requisites

Prerequisite: LAR 444.

Typically Offered

Spring

Crosslisted

PLAN 444

LAR 500 - Site Planning and Design

Credits 3

Theory, principles, and elements of site planning and design. Lectures, readings, short problems, and site visits dealing with site analysis, ecological consideration, grading drainage, circulation and parking, lighting, planting design, materials and details, management and maintenance, and cost factors.

Repeat for Credit

N

Requisites

Prerequisite: ARCH 403 or concurrent enrollment with ARCH 403, or admission to RCP professional program.

Typically Offered

Fall, Spring

LAR 501 - Landscape Architecture Seminar I

Credits 2

Discussion of current trends in landscape architecture and related fields by students, faculty, and invited speakers.

Repeat for Credit

Y

Typically Offered

Fall, Spring

LAR 510 - Landscape Architecture Tech Module I

Credits 1

Introductory theory, methods, and application of technological skills and support of concurrent landscape architecture studios and courses. Emphasis is on data

collection and management and mapping and analysis.

Repeat for Credit

N

Requisites

Prerequisite: Admission to LA professional program.

Typically Offered

Fall

**LAR 520 - Landscape Architecture Tech
Module II**

Credits 1

Introductory theory, methods, and application of technological skills and support of concurrent landscape architecture studios and courses. Emphasis is on CAD and 3-D modeling.

Repeat for Credit

N

Requisites

Prerequisite: LAR 510.

Typically Offered

Spring

**LAR 530 - Landscape Architecture Tech
Module III**

Credits 2

Intermediate theory, methods, and application of technological skills and support of concurrent landscape architecture studios and courses. Emphasis is on CAD and 3-D modeling and surveying.

Repeat for Credit

N

Requisites

Prerequisite: LAR 520.

Typically Offered

Fall

**LAR 540 - Landscape Architecture Tech
Module IV**

Credits 1

Intermediate theory, methods, and application of technological skills and support of concurrent landscape architecture studios and courses. Emphasis is on CAD and 3-D modeling and presentation graphics.

Repeat for Credit

N

Requisites

Prerequisite: LAR 530.

Typically Offered

Spring

**LAR 550 - Landscape Architecture Tech
Module V**

Credits 2

Advanced application of technological skills and support of concurrent landscape architecture studios and courses. Emphasis is on CAD and 3-D modeling, thematic mapping, and geoprocessing.

Repeat for Credit

N

Requisites

Prerequisite: LAR 540.

Typically Offered

Fall

**LAR 560 - Landscape Architecture Tech
Module VI**

Credits 1

Advanced project specific applications in data collection and management, CAD modeling, thematic mapping, and GIS, and presentation graphics.

Repeat for Credit

N

Requisites

Corequisite: LAR 705.

Typically Offered

Spring

LAR 580 - Planning and Design Intro to GIS

Credits 2

This course will provide students with the essential background in geospatial analysis and information systems for the design and planning fields. Students will learn basics about data models and management, vector and raster analysis and cartography. Students will learn how to use these skills to develop suitability analyses to evaluate the performance of plans and designs or to identify which location would be best for a particular purpose.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

LAR 635 - Golf Course Planning and Design

Credits 1-4

Fundamentals of golf course planning and design, including: history, management, design, facilities, aesthetics, and technical development.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

LAR 645 - Professional Internship Report

Credits 1

Oral and graphic presentation of work completed in LAR 702 and LAR 703.

Repeat for Credit

N

Requisites

Prerequisite: LAR 702 or LAR 703.

Typically Offered

Fall

LAR 646 - Community Engagement Studio

Credits 5

Engagement with communities and stakeholders through service learning projects. Focus on engagement methods and visualization, representation and communication to general audiences. Utilizes planning and design techniques and knowledge gained in previous semesters.

Repeat for Credit

N

Requisites

Prerequisite: LAR 442. Corequisite: LAR 050.

Typically Offered

Spring

LAR 647 - Design Implementation III

Credits 5

Continuation of LAR 439 to include large scale site design, road alignment, large area grading, soils and excavation methods, storm drainage, and utilities routing.

Repeat for Credit

N

Requisites

Prerequisite: LAR 439.

Typically Offered

Fall

LAR 650 - Landscape Architecture Seminar II

Credits 2

Literature review and discussion of current issues and trends in community planning and design. Readings and discussion in preparation for field trip.

Repeat for Credit

N

Typically Offered

Summer

LAR 655 - Landscape Architecture Professional Internship

Credits 6-9

Confirmed internship with a professional sponsor subject to departmental approval.

Repeat for Credit

N

Requisites

Corequisite: LAR 703.

Typically Offered

Spring

LAR 700 - Project Programming**Credits 3**

Research and the development of a program directed toward the advancement of a capstone project for LAR 705 Master's Project and Report.

Repeat for Credit

N

Requisites

Prerequisite: LAR 725, LAR 740, LAR 750 or corequisite: LAR 750.

Typically Offered

Fall

LAR 702 - Landscape Architecture Practicum**Credits 0**

Off-campus design studies fulfilled in an approved professional design office or international studies program.

Repeat for Credit

N

Requisites

Prerequisite: LAR 439, LAR 445 and LAR 646

Typically Offered

Spring, Summer

LAR 703 - Landscape Architecture Off-Campus Studio**Credits 5**

Off campus design studies fulfilled in an approved professional design office or in an approved international studies program.

Repeat for Credit

N

Requisites

Prerequisite: LAR 439, LAR 445 and LAR 646.

Typically Offered

Spring

LAR 704 - Environmental Landscape Planning and Design**Credits 3**

Introduction to and understanding of environmental planning, design and management of natural and social landscape systems beyond site scale. The course focuses on theories, techniques and processes for designing sustainable landscapes and urban environments. Students will develop a final project starting with the conceptualization, through inventory, analysis and simulation, in order to develop a final design proposal.

Repeat for Credit

N

Requisites

Prerequisite: LAR 580, or GEOG 508 or equivalent, or instructor permission.

Typically Offered

Fall, Spring

LAR 705 - Master's Project Studio 1**Credits 5**

In-depth exploration of a specific landscape architecture topic through research and design supervised by a major professor in accordance with Graduate School guidelines.

Repeat for Credit

N

Requisites

Prerequisite: LAR 725, LAR 740, LAR 750.

Corequisite: LAR 897. This course must be successfully taken in tandem with LAR 897, with a concurrent professor; the failure of either requires a retake (in tandem)

of both with a concurrent instructor.

Typically Offered

Fall

LAR 710 - Master's Project Studio 2

Credits 3

In-depth exploration of a specific landscape architecture topic through research and design supervised by a major professor in accordance with Graduate School guidelines.

Repeat for Credit

N

Requisites

Prerequisite: LAR 705 and LAR 897.

Corequisite: LAR 898. This course must be successfully taken in tandem with LAR 898, with a concurrent professor; the failure of either requires a retake (in tandem) of both with a concurrent instructor.

Typically Offered

Spring

LAR 720 - Public Lands and Natural Resources Law

Credits 3

Legal aspects of land use and natural resource management on the federal public lands. A brief history of the acquisition and disposition of the public domain and a review of legal authority on the public lands are followed by an examination of key legal issues concerning the resources of water, minerals, timber, range, wildlife, recreation and wilderness.

Repeat for Credit

N

Requisites

Prerequisite: Advanced standing.

Typically Offered

Fall, Spring

LAR 725 - Research Methods

Credits 3

Development of the research design process. Students will

learn to employ appropriate methods and strategies to answer research questions, and to effectively and clearly communicate research-based information to peers and the public.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

PLAN 803

LAR 734 - Rivers: Processes & Forms

Credits 3

This course addresses key aspects of hydrology such as precipitation and movement of water from uplands to channels. This movement, generally referred to as "runoff processes," is responsible for shaping the watershed. It then focuses upon fluvial geomorphology, the science of riverscapes, to examine processes and resultant landforms. This course teaches field observation skills and field survey procedures that allow the classification of natural rivers and streams. Finally, it previews methods of prediction and monitoring of river channel stability parameters.

Repeat for Credit

N

Typically Offered

Fall

LAR 735 - Advanced Golf Course Planning and Design

Credits 1-4

Advanced methods and strategies of golf course and resort planning and design.

Repeat for Credit

N

Requisites

Prerequisite: LAR 635.

Typically Offered

Fall, Spring, Summer

LAR 740 - Advanced Studio

Credits 5

In-depth exploration of a specific landscape architecture topic.

Repeat for Credit

N

Requisites

Prerequisite: LAR 354, LAR 439, LAR 444, LAR 646.

Corequisite: LAR 750.

Typically Offered

Fall

LAR 741 - Problems in Landscape Architecture

Credits 1-18

Specific problems and/or reports in the area of landscape architecture.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

LAR 742 - Topics in Italian Landscape Architecture

Credits 3

Investigation of Italian culture, landscape and communities through analytical readings and/or drawings.

Repeat for Credit

Y

Typically Offered

Spring

LAR 744 - Community Planning and Design

Credits 4

Study of the relationships between planning and design in the growth and development of cities and towns.

Note

Two hours lecture and six hours studio a week.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 315.

Typically Offered

Fall

LAR 745 - Professional Practice

Credits 3

Studies of conventional and newly developing methods of professional design practice. Instruction in the relationships of architects, landscape architects, interior architects, and other professionals to users, clients, construction industry, society, government, and one another.

Repeat for Credit

N

Typically Offered

Fall

LAR 746 - Urban Design Studio I

Credits 4

An interdisciplinary design studio involving large-scale design; projects with extensive time implementation sequence; responses to socioeconomic, cultural, environmental, and technical needs; and implementation strategies. Design methods are applied to selected urban areas of the Midwest.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 315 or equivalent and concurrent enrollment in PLAN 745.

Typically Offered

Fall

LAR 750 - Advanced Seminar

Credits 3

Studies and discussion of topics related to specialization studio.

Repeat for Credit
Y

Typically Offered
Fall

LAR 751 - Comprehensive Studio 1

Credits 5

Culminating experience in landscape architecture design studio.

Repeat for Credit
N

Requisites
LA program students are required to obtain a "C" or better in this course.

Typically Offered
Fall, Spring

LAR 752 - Comprehensive Studio 2

Credits 5

Culminating experience in landscape architecture studio.

Repeat for Credit
N

Requisites
LA program students are required to obtain a "C" or better in this course.

Typically Offered
Fall, Spring

LAR 753 - Professional Practice: Professional Responsibility

Credits 1

Interdisciplinary course addresses the connections between allied design professions and the larger community. It helps students to understand and appreciate their professional legal and ethical responsibilities.

Repeat for Credit

N

Requisites
Prerequisite: LAR 442.

Typically Offered
Fall, Spring

LAR 754 - Professional Practice: Office Practices

Credits 1

Interdisciplinary course addresses practice-based issues concerning professional relationships in the design and delivery process, management of projects, communication practices, and fiscal concerns.

Repeat for Credit
N

Requisites
Prerequisite: LAR 442.

Typically Offered
Fall, Spring

LAR 755 - Professional Practice: Discipline-Specific Topics

Credits 1

Covers discipline-specific concerns, focusing on issues specific to architecture, interior architecture and product design, landscape architecture or regional and community planning.

Repeat for Credit
N

Requisites
Prerequisite: LAR 442.

Typically Offered
Fall, Spring

LAR 756 - Design of Parks and Recreation Areas

Credits 3

Site planning of national, state, municipal, and private

parks, and specialized recreation areas.

Repeat for Credit

N

Typically Offered

Fall

LAR 759 - Landscape Resource Evaluation

Credits 3

The determination of the impact of physical project design upon the natural and manmade environment. Studies of existing site conditions and projections of the effect of such projects upon the site and vicinity.

Repeat for Credit

N

Requisites

Prerequisite: Senior or graduate standing.

Typically Offered

Spring

LAR 761 - Comprehensive Seminar 1

Credits 2

Culminating experience in landscape architecture seminar.

Repeat for Credit

N

Requisites

LA program students are required to obtain a "C" or better in this course.

Typically Offered

Fall, Spring

LAR 762 - Comprehensive Seminar 2

Credits 2

Culminating experience in landscape architecture design seminar.

Repeat for Credit

N

Requisites

LA program students are required to obtain a "C" or better in this course.

Typically Offered

Fall, Spring

LAR 806 - Portfolio Design

Credits 3

The Portfolio Design course guides students in development of a professional portfolio of work, with the goal of producing a product that can be used for internship application, job search, or career advancement. Students explore visual thinking and visual communication with a culminating goal of producing a final portfolio.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student standing and familiarity with Adobe Creative Suite or Creative Cloud software.

Typically Offered

Fall, Spring, Summer

LAR 811 - Unlocking Creativity

Credits 3

Do you want to become creative? Good news, you already are! For students in all majors, this course is designed to help you access your creative potential and become more imaginative, innovative, and courageous. Learning outcomes include overcoming blocks, refining your creative process, practicing activities to enhance creativity, and effectively communicating ideas.

Repeat for Credit

N

Typically Offered

Fall, Spring

LAR 860 - Advanced Planting Design

Credits 1-4

Special studies in advanced planting design.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

LAR 870 - Advanced Landscape Architecture

Credits 1-4

Special studies and design in advanced landscape architecture.

Repeat for Credit
Y

Requisites
Prerequisite: LAR 702.

Typically Offered
Fall, Spring, Summer

LAR 880 - Advanced Landscape Architecture Construction

Credits 1-4

Specialized study of large-scale landscape planning involving landscape construction and grading.

Repeat for Credit
Y

Requisites
Prerequisite: LAR 439.

Typically Offered
Fall, Spring, Summer

LAR 897 - Proposal Writing

Credits 2

Development of a master's thesis proposal.

Repeat for Credit
Y

Requisites
Prerequisite: LAR 725 and LAR 740
LA program students are required to obtain a "C" or better in this course.

Typically Offered
Fall, Spring

LAR 898 - Master's Report

Credits 2

Comprehensive application of research and design study through individual studies approved by the department faculty.

Repeat for Credit
N

Requisites
Prerequisite: LAR 705 and LAR 897.
Corequisite: LAR 710. This course must be successfully taken in tandem with LAR 710, with a concurrent instructor; the failure of either requires a retake (in tandem) of both with a concurrent instructor.

Typically Offered
Spring

LAR 899 - Research in Landscape Architecture

Credits 1-18

Investigations in landscape architecture and related areas, of such caliber as to form the basis for a graduate thesis.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing in landscape architecture.

Typically Offered
Fall, Spring, Summer

LATIN 101 - Latin I

Credits 4

An introductory study of the structure of Latin.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

LATIN 102 - Latin II**Credits 4**

Continuation and completion of the study of the structure of Latin.

Repeat for Credit

N

Requisites

Recommended Prerequisite: LATIN 101 or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

LATIN 301 - Intermediate Latin - Prose**Credits 3**

Continuation of the study of Latin syntax and grammar, based upon reading of Roman prose. Topics may include Caesar, Cicero, or Sallust.

Repeat for Credit

Y

Requisites

Prerequisite: LATIN 102.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

LATIN 302 - Intermediate Latin - Poetry**Credits 3**

The reading of Latin poetry in the original at an intermediate level. Topics may include Virgil, Ovid, and Lucretius.

Repeat for Credit

Y

Requisites

Prerequisite: LATIN 301.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

LEAD 195 - CAT Community Connections**Credits 1-3**

Interdisciplinary course that explores the connections among two different fields, courses, or disciplines. For first-year students enrolled in a specific CAT (Connections Across Topics) Community linked to the Staley School of Leadership Studies.

Repeat for Credit

N

Typically Offered

Fall, Spring

LEAD 200 - Foundations of Leadership of Society**Credits 1-3**

Expose students to a variety of concepts, theories and skills relevant to contemporary leadership thought. Consider their personal conceptions and philosophy of leadership. Examine leadership within particular contexts such as creating change, ethical leadership, leadership and management, and historical leadership thought and leaders.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

LEAD 212 - Introduction to Leadership Concepts

Credits 2-3

This course is organized to provide students with a broad overview of leadership theories, an introduction to ethical decision making, identification of personal leadership styles, and current societal issues for leaders.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

LEAD 213 - Applied Leadership Skills

Credits 3

This course provides opportunities for all interested students to be introduced to leadership skills application, with emphasis on practice in supervised clinical settings.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

LEAD 225 - Fundamentals of Global Food Systems Leadership

Credits 3

An interdisciplinary approach to the fundamental roles people, policies, and cultures play in the global food system enterprise as it relates to sustainable food production, processing, distribution, and availability. Students will explore complexities within self, others, and community related to leadership in the context of a rapidly increasing global population.

Note

Course Description

An interdisciplinary approach to the fundamental roles people, policies, and cultures play in the global food system enterprise as it relates to sustainable food production, processing, distribution, accessibility, and availability.

Students will explore complexities within self, others, and community related to leadership in the context of an increasing global population.

Course Objectives

At the conclusion of the course, students will be able to:

Identify the fundamental systems, levels, stakeholders, and complexities of the global food system and explore their codependent nature

Provide examples of successes and limitations of governmental and non-governmental organizations in implementing change in global food systems

Examine the challenges of food abundance, food insecurity, nutrition, obesity, and poverty in global food systems

Distinguish between low-income and high-income countries and domestic and international food systems challenges

Critically reflect on leadership processes, practice, and purpose

Distinguish between the roles of authority and leadership

Recognize the necessity of working across disciplines

Name the possible multiple interpretations that exist around global food challenges

Summarize the cultural views of gender roles within food production and processing systems and the impact these values play in global food systems development efforts

Recognize different narratives about food

Describe the social, political, and economic dimensions of global food systems

Consistently articulate a broad, integrated food systems perspective focused on health, humans, agriculture, environments, communities, and economies

Examine the various global food systems through the lens of nutrition, vulnerable populations, food waste, post-harvest loss, climate change, and sustainable intensification.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

GENAG 225, DAS 225

K-State 8

Global Issues and Perspectives

LEAD 251 - Honors Leadership I

Credits 3

This is the first of two courses in a year-long curriculum that is designed to explore four tenets of leadership: citizenship, stewardship, humanitarianism, and purposeful passion. Students will begin to clarify and express their core values as they explore questions around effective leadership and followership concepts and strategies.

Repeat for Credit

N

Requisites

Prerequisite: Freshman standing with honors.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

LEAD 252 - Honors Leadership II

Credits 3

This is the second of two courses in a year-long curriculum that is designed to explore four tenets of leadership: citizenship, stewardship, humanitarianism, and purposeful passion. Students will continue to explore their values and develop leadership and teamwork skills through service, reflection, and designing a purposeful passion project.

Repeat for Credit

N

Requisites

Prerequisite: LEAD 251 Honors Leadership I. Freshman standing with honors.

Must be taken in the semester immediately subsequent to LEAD 251 Honors Leadership I.

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

LEAD 310 - Strengths Peer Coach Practicum

Credits 0-3

This course is designed to help students develop the skill of coaching within the context of strengths-based leadership while serving as a strengths peer coach. Additional frameworks will include research on employee engagement, well-being, and positive psychology. Students will participate in training, peer observations, weekly seminars, reflections, and debriefs around the peer coaching experience. Students will also apply their coaching skills by holding weekly peer coaching sessions.

Repeat for Credit

N

Typically Offered

Fall or Spring

LEAD 312 - Peer Leader Practicum

Credits 0-3

This course uses experiential learning to prepare students with the personal, relational, planning, and facilitation skills needed to effectively lead a team or organization. Weekly LEAD 212 facilitation, class preparation seminars, and peer feedback will allow for experience, reflection, meaning-making, and experimentation.

Repeat for Credit

Y

Requisites

Prerequisite: LEAD 212 - Introduction to Leadership Concepts.

Corequisite: Junior standing.

Typically Offered

Fall, Spring

LEAD 320 - Theories of Leadership

Credits 3

This course provides an overview of the major theories of leadership and the empirical and theoretical evidence supporting those theories. Students will demonstrate an understanding of the theories and the empirical evidence supporting them as well as develop their ability to critically assess the theoretical and empirical work surrounding leadership theories and models.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Social Sciences

LEAD 325 - Uncertainty in Global Food Systems Leadership

Credits 3

Explore technical and adaptive elements of grand challenges across disciplines. This course addresses the impact of cultural identity, life experience, and world views on leadership relationships as it relates to privilege and inclusion in the context of global food systems. Students will consider elements of community-engaged work.

Repeat for Credit

N

Requisites

Prerequisite: GENAG 225 or LEAD 225 or DAS 225.

Typically Offered

Spring

Crosslisted

GENAG 325, DAS 325

K-State 8

Global Issues and Perspectives

LEAD 350 - Culture and Context in Leadership

Credits 3

Opportunity to integrate the course and leadership experiences in light of contemporary issues in the study of leadership behavior across cultures and contexts. Based on the current research and writing that introduce and discuss the impact of culture and context on the concept of leadership and development of individuals as interculturally competent leaders.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

LEAD 399 - Internships for Career Development

Credits 1-2

This course helps you apply your academic knowledge, skills and understanding to experiences as a developing leader within the workplace. The course is structured to incorporate your internship experience with self-directed analysis to develop your personal, academic and professional competencies. You will practice and reflect on your leadership strengths.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

LEAD 405 - Leadership in Practice

Credits 3

This course provides an opportunity to practice leadership and followership in an experiential setting followed by an in-depth classroom discussion.

Repeat for Credit

Y

Requisites

Prerequisite: LEAD 212, LEAD 350, and junior standing.

Typically Offered

Fall, Spring, Summer

LEAD 420 - Theories of Nonprofit Leadership

Credits 3

This course provides an overview of nonprofit organization leadership by integrating concepts and theories with applied practice. Students will demonstrate an understanding and application of competencies (knowledge and skills) necessary for professional success as a nonprofit organization leader.

Repeat for Credit

N

Typically Offered

Fall, Spring

LEAD 425 - Global Food Systems Leadership in Action

Credits 3

In this capstone course, students will conduct a community-engaged global food systems leadership research/service project. Emphasis will be placed on data collection, analysis and dissemination to appropriate audiences. Additional emphases will be on ethical dimensions of leadership and individual exploration of careers and roles within global food systems.

Repeat for Credit

N

Requisites

Prerequisite: GENAG 325 or LEAD 325 or DAS 325.

Typically Offered

Fall

Crosslisted

GENAG 425

K-State 8

Global Issues and Perspectives

LEAD 430 - Women and Leadership

Credits 3

This course addresses issues related to leadership as it intersects with women's studies scholarship, such as: women's styles of leadership, women and competition, sexism in the workplace, gender differences in communication, and feminist models of leadership. This course will explore issues related to women's leadership development in the theoretical contexts of leadership studies and women's studies.

Repeat for Credit

N

Requisites

Prerequisite: LEAD 212 or WOMST 105.

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

LEAD 450 - Capstone in Leadership

Credits 3

In this capstone course students will integrate and apply learning from the minor. Emphasis will be on the clarification of the students' personal values, their evaluation of codes of ethics for organizations in their proposed professions, and their analysis of current events through the lens of ethical dimensions of leadership.

Repeat for Credit

Y

Requisites

Prerequisite: LEAD 212, LEAD 350, LEAD 405

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

LEAD 489 - Seminar in International Service-Learning

Credits 0-3

This course is the first phase of the International Service Teams service-learning program. Learning in the course facilitates preparation for the summer service experience. This course is designed around the PARE service-learning model; both the curriculum and class expectations will be reflective of the service-learning process.

Repeat for Credit

N

Requisites

Prerequisite: Students must complete a program application, interview, and be accepted into the International Service Team program prior to enrollment in the course.

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

LEAD 499 - Nonprofit Organization Internship**Credits 3**

This course provides a capstone opportunity for students in the nonprofit leadership focus of the leadership studies minor to document and present their achievement of the foundation and professional development competencies required by American Humanics national certification in nonprofit leadership through coursework, co-curricular and work experiences, and their 300-hour internship experience. Current texts focusing on the leadership of high impact nonprofit organizations will be incorporated into this process.

Repeat for Credit

N

Requisites

Prerequisite: LEAD 350, LEAD 420.

Typically Offered

Other

LEAD 502 - Independent Study in Leadership Studies**Credits 0-3**

Selected topics in leadership studies.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of department chair.

Typically Offered

Fall, Spring, Summer

LEAD 510 - Foundations of Community-Engaged Leadership**Credits 3**

This course integrates leadership theory and practice exploring principles, purposes, and processes of community engagement and democratic practice. Utilizing service-learning methods, students will partner with community to consider and examine foundational forms of civic and public life. Community paradigms will be explored and deconstructed in relation to course themes.

Repeat for Credit

N

Typically Offered

Fall

LEAD 515 - Teaching Leadership**Credits 0-3**

Preparing people for leadership in a diverse and changing world requires new thinking and approaches to leadership learning and development. Learners will explore philosophies, frameworks, and strategies for designing, delivering, and assessing leadership courses and programs in educational (curricular and co-curricular), workplace, and civic contexts. Learners will develop a philosophy of leadership teaching statement and create a contextually and culturally relevant curricular design document (e.g., class syllabus or program outline). We will serve and attract learners who are working in the field of leadership studies and programs, or aspiring leadership educators.

Note

This course will be listed as 715 at the graduate level.

Repeat for Credit

Y

Typically Offered
Fall, Spring

LEAD 520 - Approaches to Community-Engaged Leadership

Credits 3

Through theory and practice, students consider the ethical dimensions of leadership in relation to community systems, organizations, and institutions. Students will deconstruct concepts of community-engaged leadership including race, class, gender, justice, and power. Through service-learning, students will work with partners to understand community systems, organizations, and institutions.

Repeat for Credit
N

Requisites
Prerequisite: LEAD 510.

Typically Offered
Spring

LEAD 560 - Experiences in Community-Engaged Leadership

Credits 6

In this capstone experience students design, plan, execute, and evaluate a community-engaged research project. The project will be consistent with the principles of community engagement and the purposes and process of democratic practice. Students will exercise leadership with community partners to build capacity for systemic change.

Repeat for Credit
N

Requisites
Prerequisites: LEAD 510 and LEAD 520.

Typically Offered
Spring

LEAD 700 - Nonprofit Leadership Concepts

Credits 3

Explores the unique facets of nonprofits and how to

establish vision, mission, and practices that best position organizations to build leadership capacity for community change. Leadership within the nonprofit sector has unique considerations separate from those in governmental or business organizations including democratic governance, championing a cause, volunteer leadership, and mission-driven organizational design.

Repeat for Credit
N

Typically Offered
Fall or Spring

LEAD 701 - Foundations of Leadership

Credits 3

Study of the key issues in the theory, research, and application of leadership in organizations. This includes defining leadership, understanding situational characteristics that facilitate / hinder effective leadership, understanding effective / dysfunctional leadership, and gaining greater insight into one's own leadership style and functioning.

Repeat for Credit
Y

Typically Offered
Fall, Spring

LEAD 708 - Facilitating Leadership in Complex Adaptive Systems

Credits 3

This course surveys the theory and practice of facilitating leadership activity in Complex Adaptive Systems through various process models and approaches to practice.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

Crosslisted
N

LEAD 715 - Teaching Leadership

Credits 0-3

Preparing people for leadership in a diverse and changing world requires new thinking and approaches to leadership learning and development. Learners will explore philosophies and frameworks **of leadership and leadership development, as well as** strategies for designing, delivering, and assessing leadership courses and programs in educational (curricular and co-curricular), workplace, and civic contexts. Learners will develop a leadership teaching philosophy statement and create a contextually and culturally relevant **leadership curriculum** design document (e.g., class syllabus or program outline).

Updated 3.25.24 after feedback from Dr. Collins in EdLea

Note

This course can be taken as LEAD 515 or LEAD 715 based on UG or GRAD status. LEAD 515 has been approved.

Repeat for Credit

Y

Typically Offered

Fall or Spring

LEAD 720 - Leadership Coaching**Credits 0-3**

This course develops practices of coaching, listening, and empathy for leadership and examines current theory and practice around coaching as a leadership practice. Coaching frameworks from the field of leadership will be examined through the lens of contemporary theories and frameworks.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

LEAD 750 - Leading Change**Credits 3**

This course introduces theoretical and practical leadership frameworks for understanding and responding to local and global challenges of sustainable development. Students in the course will learn and apply effective leadership processes and develop individual capacity for leading change.

Note

Impact Report for LEAD 750

There are no results for this report.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

LEAD 755 - Systems Leadership**Credits 3**

This course examines theories and approaches to leadership through a systems lens, a critical approach to leading complex organizations and addressing global challenges. Learners will develop an in-depth understanding of systems dynamics and gain skills necessary to navigate and influence systems effectively. The course will equip learners with capacities to catalyze, enable, and support processes of systems-level change in their own organizations and society.

Repeat for Credit

N

Typically Offered

Fall or Spring

LEAD 799 - Practicum in Leadership for Conflict Transformation**Credits 3**

In this capstone seminar, participants will explore culminating perspectives and reflect on learning related to leadership, conflict transformation, and change. Participants will complete a final portfolio representing a trajectory of learning. They will synthesize key learning from the program, describe practical implications from prior learning, and design future application goals to support the practice of leadership, conflict transformation, and change in their personal lives and professional careers.

Note

Intended for students in Leadership for Conflict Transformation masters program.

Repeat for Credit

N

Requisites

Prerequisite: LEAD 701 (or 801)

Prerequisite: LEAD 750

Prerequisite: LEAD 755

Typically Offered

Fall or Spring

LEAD 814 - Graduate Studies in Leadership Communication**Credits 3**

This course examines the intersections of community-engaged scholarship and leadership through practices of relationship, story, strategy, and action. Students are introduced to resources and opportunities for pursuing public engagement, community-engaged scholarship, and successful program completion.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

AGCOM 814, COMM 814

LEAD 815 - Seminar in Leadership Communication**Credits 1**

This seminar provides doctoral students opportunities for collaboration and mentorship with peers, faculty, and visiting scholars, and exploration of career pathways in public engagement.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

Crosslisted

AGCOM 815, COMM 815

LEAD 818 - Qualitative Approaches to Studying Leadership and Engagement**Credits 3**

This course is designed to provide students a survey of community-engaged and qualitative approaches to studying leadership and engagement process and practice in community and organizations.

Repeat for Credit

N

Typically Offered

Fall or Spring

Crosslisted

NA

LEAD 820 - Contemporary Perspectives on Leadership Theory and Practice**Credits 3**

This course is designed to build students' capacity to engage with leadership theory as critical learners. Students will explore ideas, philosophical assumptions, and practices associated with the term "leadership" as a concept through theories that have developed over time. We will also examine how the practice of leading in contemporary contexts can be understood through theories.

Repeat for Credit

N

Typically Offered

Fall

LEAD 845 - Approaches to Public/Community Engagement**Credits 3**

The course will provide students a survey of key concepts and theoretical frameworks associated with deliberative democracy and public engagement. A specific focus will be given to how forms of community-engaged scholarship intersect course content in both theory and practice.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

AGCOM 845, COMM 845

LEAD 886 - Seminar in Leadership Studies**Credits 1-3**

Seminar in Leadership Studies.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

AGCOM 886, COMM 886

LEAD 945 - Social Science Research for Public Problem Solving**Credits 3**

The study of how social science research and social sector evaluation can be applied to address public problems, including the identification of public problems and the critique of current evaluation methods, and applying concepts by developing an evaluation including quantitative and qualitative analysis in partnership with social sector partners.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

AGCOM 945, COMM 945

LEAD 999 - Research in Leadership Communication**Credits 1-15**

Doctoral research demonstrates the candidate's ability to conduct significant original research related to leadership and communication, to analyze the information obtained from the research, and to present the results in a dissertation format appropriate to the field.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

Crosslisted

AGCOM 999, COMM 999

MANGT 220 - Principles of Management**Credits 3**

Provides an introduction to the four basic managerial functions of planning, organizing, leading and controlling and their application to today's complex work environment. An emphasis is placed on the roles and responsibilities of managers that help them to successfully meet organizational objectives by effectively leading employees and optimizing processes.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

MANGT 230 - Business Law I**Credits 3**

A study of law as it relates to business, including court procedures and systems, contracts, sales, business crimes, torts, business organizations, and government regulation.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

MANGT 260 - Workplace Dynamics and Organizational Culture**Credits 3**

This course explores the complex factors that influence workplace dynamics and organizational culture. Students will examine how managing individual differences can improve conflict resolution, drive cultural change, and improve the effectiveness of teams and organizations. Students will gain practical insights into fostering positive work environments that promote belonging, collaboration, satisfaction, motivation, and productivity.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

MANGT 300 - Introduction to Total Quality Management

Credits 1

Overview of major topics related to Total Quality Management (TQM), including managerial and engineering aspects.

Note

One hour lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100, MATH 205, or MATH 220, sophomore standing.

Typically Offered

Fall, Spring, Summer

MANGT 330 - Business Law II

Credits 3

A study of civil law as it affects commercial transactions, including corporations, partnerships, property, commercial paper, and secured transactions.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 230.

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

MANGT 366 - Information Systems and Business Analytics

Credits 3

A comprehensive view of organizational information systems required for obtaining and transforming data into business analytics and intelligence. Cases and hands-on exercises emphasize information systems usage in data acquisition, analysis, and presentation leading to effective organizational decision-making.

Note

Demonstrate competence in use of computer spreadsheets.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MANGT 421 - Introduction to Operations and Supply Chain Management

Credits 3

To gain knowledge of Operations and Supply Chain Management (OSCM) principles and techniques, such as process management, project management, quality management, continuous improvement, forecasting, supply chain management, inventory management, planning and scheduling, and lean systems. The primary goals are to develop students' analytical skills in solving OSCM-related problems in a variety of business settings and to help students understand how OSCM contributes to a firm's competitive position in a global marketplace.

Repeat for Credit

N

Typically Offered
Fall, Spring, Summer

K-State 8
Empirical and Quantitative Reasoning

MANGT 450 - Non-Profit Management

Credits 3

This course introduces students to strategic management issues in nonprofit organizations. Nonprofits represent an important sector of the economy that influence the lives of many individuals. In this course, students will learn about the trends and issues affecting the sector as the lines between private, public, and nonprofit organizations continue to evolve. Major topics include: strategic planning, board governance, nonprofit financial management, risk management, resource development, public relations, and impact and accountability measures. The emphasis is on nonprofit organizations in the United States.

Repeat for Credit
N

Typically Offered
On sufficient demand

MANGT 490 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Note
Consent of instructor

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

MANGT 491 - International Management Experience

Credits 3

This course is designed to provide students with an

opportunity to observe international business and management perspectives by participating in a field trip outside the United States. This experiential course may involve a combination of business visits, cultural experiences, internship activities, applied research projects, personal reflection exercises, or other learning activities while abroad.

Repeat for Credit
N

Typically Offered
On sufficient demand

K-State 8
Global Issues and Perspectives

MANGT 495 - Management Internship

Credits 1-3

Applied management business experience designed to coordinate the interests of students and firms.

Repeat for Credit
Y

Requisites
Prerequisite: MANGT 220 or consent of instructor.

Typically Offered
Fall, Spring, Summer

MANGT 497 - Topics in Management

Credits 1-3

Discussion and analysis of current issues in management, including topics related to new theory, the practice of management, and management development.

Repeat for Credit
Y

Typically Offered
On sufficient demand

MANGT 498 - Independent Studies in Management

Credits 1-6

In-depth analysis of special problems in management including study of current literature.

Repeat for Credit

Y

Requisites

Prerequisite: MANGT 220 or consent of department head.

Typically Offered

On sufficient demand

MANGT 515 - Managerial Consulting**Credits 3**

This course provides an overview of the management consulting process. Students will learn how to apply consulting tools and frameworks to engage clients, analyze organizational problems, formulate and present recommendations, and implement change initiatives. The content is relevant to anyone interested in analyzing internal business opportunities, tasked with managing organizational change, or those pursuing traditional consulting careers.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or Junior standing.

Typically Offered

On sufficient demand

MANGT 520 - Organizational Behavior**Credits 3**

An examination of human behavior in organizations to prepare individuals for their managerial careers. The course provides a framework for students to diagnose and manage issues associated with personality and individual differences, perceptions, motivation, diversity and inclusion, fairness and equity, decision making, group functioning, conflict management, culture, and leadership in organizations.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or Junior Standing.

Typically Offered

Fall, Spring

MANGT 521 - Managerial Decision Analytics**Credits 3**

Managerial decision analytics uses descriptive, predictive, and prescriptive data analytics to improve organizational decision-making processes.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220, MATH 205, and STAT 250.

Typically Offered

Fall, Spring

MANGT 522 - Operations Planning and Control**Credits 3**

Development of concepts and understanding of planning and control systems for allocating resources and scheduling activities in business firms. To guide and coordinate the flow of materials, labor inputs, and goods and services through physical productive systems. Topics include: aggregate planning, master production scheduling, production activity planning and control, operations information systems, inventory control, material requirements planning, and total quality control.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 421.

Typically Offered

On sufficient demand

MANGT 523 - Human Resources Analytics**Credits 3**

Explores using data analytics to examine Human Resource Management issues in organizations. A diverse set of

research methods and analytic techniques will be used to collect, organize, analyze, and visualize data to examine problems and formulate solutions that can help organization better manage their HR processes.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or consent of department head

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MANGT 525 - Organizational Management and Data Analytics

Credits 3

Provides students with new knowledge and capability in the use of a diverse set of research methods and data analytic techniques to collect, organize, analyze, and visualize data to examine organizational management problems and present solutions that can help create a sustainable competitive advantage.

Note

MANGT 266 or consent of department head

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

MANGT 527 - Sports Management Analytics

Credits 3

Provides knowledge and capabilities in analytics and

artificial intelligence (AI) for the quantitative management of professional sports organizations. Explores topics in measurement and managerial assessment of athletic and team performance, strategic and tactical analyses in professional sports, and leveraging AI and data for optimized decision making in sports management.

Note

MANGT 366 OR consent of department head

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366

Typically Offered

On sufficient demand

MANGT 530 - Labor Relations and Negotiations

Credits 3

Provides broad coverage of the goals and operations of labor unions as well as the interactions of labor and management. In addition, this course, this course introduces students to the bargaining and negotiation process within organizations. Effective negotiation strategies are taught and individual negotiation skills are enhanced through opportunities to participate in negotiation simulations. Basic course in industrial and labor relations. Broad coverage of the institution of collective bargaining and its environment, the goals and operation of labor unions, the impact of unions on management, and labor relations law.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or Junior standing.

Typically Offered

Fall, Spring

MANGT 531 - Human Resources Management

Credits 3

This course provides an overview of the human resource systems and processes needed to achieve organizational

effectiveness and strategic success. All key functional areas including human resource planning, staffing, performance management, employee development, and compensation are addressed.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or junior standing.

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

MANGT 535 - Employment Law

Credits 3

A survey course designed to acquaint students with the broad and controlling aspects of prominent laws which affect human resource management. Topics include ADA, ADEA, OSHA, Title VII, etc.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or junior standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

MANGT 541 - Management of Quality

Credits 3

Coverage of quality as a management philosophy through the study of ideas from contemporary quality philosophies on continuous improvement, employee empowerment, statistical process control charting, and other applicable organizational topics.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 421.

Typically Offered

Fall, Spring

MANGT 550 - Organizational Training and Development

Credits 3

The process of training and developing the human resources in organizations, which includes organizational diagnosis, needs assessment, program design, program implementation, and the evaluation of program effectiveness. Current trends in the content and process of training and development activities are also examined.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or Junior Standing.

Typically Offered

On sufficient demand

MANGT 553 - Business Project Management

Credits 3

Provides in-depth coverage of project management concepts and methodologies required for service and manufacturing operations. Topics to be covered include, but are not limited to: project selection and evaluation, project organization, management or project organization, project scheduling, project budgeting, project monitoring, and control and project closure.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220, MANGT 421.

Typically Offered

Fall, Spring

MANGT 561 - Transportation and Warehouse Management

Credits 3

Covers concepts and techniques in transportation and warehouse management that create competitive advantage and enhanced customer service. Develops understanding of the role of transportation and warehousing in the supply chain, various transportation modes and their intermodal connectivity, principles of transportation network design, and analysis of warehouse strategic and operational management.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 421.

Typically Offered

Spring

MANGT 566 - Computer Systems for Finance and Investment Management**Credits 3**

An integrated course examining the interrelationship between finance/investment management and information technology taught using a mixture of theory/concepts and hands-on activities. Topics include spreadsheet design and use in finance and investments, decision support systems and artificial intelligence used in risk analysis, financial database design, and information technologies used to transmit financial and investment information.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 and FINAN 450.

Typically Offered

On Sufficient Demand

MANGT 580 - K-State MIS: Health Info Sys Portfolio I**Credits 9**

This course serves a mechanism to indicate students have completed a series of Health Information Systems courses at Johnson County Community College in the process of completing their Associate's Degree. It is used solely for transfer credit tracking and fulfills the thematic sequence

requirement in the College of Business. Students cannot enroll in this class nor can this course be transferred into programs other than Management Information Systems in the College of Business Administration.

Repeat for Credit

N

Requisites

Prerequisite: Associates Degree in Health Information Systems from JCCC.

Typically Offered

Fall, Spring, Summer

MANGT 581 - K-State MIS: Health Info Sys Portfolio II**Credits 15**

This course serves a mechanism to indicate students have completed a series of Health Information Systems courses at Johnson County Community College in the process of completing their Associate's Degree. It is used solely for transfer credit tracking and fulfills the unrestricted electives requirement in the College of Business. Students cannot enroll in this class nor can this course be transferred into programs other than Management Information Systems in the College of Business Administration.

Repeat for Credit

N

Requisites

Prerequisite: Associates Degree in Health Information Systems from JCCC.

Typically Offered

Fall, Spring, Summer

MANGT 590 - International Management**Credits 3**

Analysis of the political, legal, economic, and sociocultural environments and how they influence international management decisions such as timing and place of foreign market entry, mode of entry, and formulations and implementation of international strategies. Students develop the knowledge and skills necessary for managing international operations including cross-cultural communication, negotiations, ethical decision making, leadership, staffing, and workforce motivation.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or Junior standing.

Typically Offered

Fall, Spring

MANGT 595 - Strategic Management**Credits 3**

Undergraduate capstone course that requires integration of knowledge gained in prior functional coursework and application of strategic management concepts to develop value-creating solutions to business challenges. Students develop the knowledge and skills necessary to identify and analyze strategic issues, formulate strategic plans, and implement strategic initiatives within organizations.

Note

Open only to students with 75 credit hours or non-business graduate students.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450 and MANGT 220 and MKTG 250 and 75 credit hours and admitted in a College of Business Administration major (ACCTG, ENTRP, FINAN, GENBA, MANGT, MIS, MKTG, PSS).

Typically Offered

Fall, Spring, Summer

MANGT 596 - Business Ethics and Corporate Citizenship**Credits 3**

Delivers a managerial perspective on how corporations can fulfill their economic, legal, ethical, and philanthropic responsibilities to a broad array of business stakeholders.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220, MKTG 250, and senior-level students admitted in a College of Business Administration

degree track (major).

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

MANGT 610 - Managing for Sustainability: Strategy, Investing, and Impact**Credits 3**

Examines how organizations create long-term value for stakeholders and society through environmental, social, and governance (ESG) strategy, investment, and impact. Students explore the concept of business sustainability from an applied perspective, to understand better how economic, human, and natural environmental systems are interlinked. Specific topics include the formulation and implementation of ESG strategies within organizations, managing relationships with stakeholders, and the measurement and disclosure of ESG impact.

Repeat for Credit

N

Typically Offered

On sufficient demand

MANGT 623 - Compensation and Performance Management**Credits 3**

An in-depth analysis of compensation system design and performance management strategies needed to attract, retain, develop and motivate the human capital required for organizational effectiveness and strategic success.

Repeat for Credit

N

Requisites

Corequisite: MANGT 531.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility
K-State 8 Tag 2
Social Sciences

MANGT 630 - Sports Management

Credits 3

An exploration into management issues associated with professional and amateur sports. Major topics include strategic planning, operational planning, human resource management, team management, leadership, communication, and diversity all in the context of sports.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220 or MKTG 250 or Junior standing.

Typically Offered

Fall, Spring

MANGT 633 - Advanced Human Resource Management

Credits 3

An in-depth analysis of selected topics in human resource management including study of current research and literature.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 531.

Typically Offered

On sufficient demand

MANGT 643 - Organizational Staffing

Credits 3

Focuses on recruitment, selection, and retention issues, including an in-depth consideration of legal and practical issues involved in the acquisition and retention of human resources. Detailed coverage of job analysis, criterion development, recruitment strategies, and techniques and procedures for ensuring valid and effective selection of employees.

Repeat for Credit

N

Requisites

Corequisite: MANGT 531.

Typically Offered

Fall, Spring

MANGT 652 - Constraint Management and Continuous Improvement

Credits 3

The intent of this course is to provide an overview of the application of Theory of Constraints (TOC). TOC suggests that every process or system has at least one constraint that prevents the operation from being more efficient. TOC offers methodologies that are specifically developed to identify and manage constraints to enable the operation to achieve its goals. Students will be taught the skills required for the identification and management of constraints within an operation system.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220, MANGT 421, MANGT 521.

Typically Offered

On Sufficient Demand

MANGT 660 - Supply Chain Planning and Control

Credits 3

Provides a framework of how the demand side of the supply chain should interface with supply side in the context of global manufacturing and service. Topics include: layout/process design and control, capacity planning, master scheduling, materials requirement, coordination, and revenue management.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 421 or graduate school status

Typically Offered

Fall

MANGT 662 - Procurement, Logistics and Supply Chain Design**Credits 3**

Addresses the interrelationship between operations and other functions required to deliver value to the end customer of a supply chain. Topics include: strategic procurement and purchasing operations and process, sourcing decisions, location strategies, distribution network design, global supply chain network design, and supply chain risk management.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 421 or graduate school status.

Typically Offered

Fall

MANGT 663 - Supply Chain Analytics**Credits 3**

The objective of this course is to introduce models and tools to effectively manage a supply chain that purchase, produce, and distribute products. Topics include: forecasting, production and logistics, and inventory management. We illustrate the effectiveness of these models and tools using real-life cases and examples drawn from diverse industries.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 421 or graduate school status

Typically Offered

On sufficient demand

MANGT 710 - Operations and Supply Chain Management**Credits 3**

The study of the role of operations systems in the provision

of value for the customer. Operations systems design, capacity determination, resource requirements planning and control, theory of constraints, supply chain management, quality management and control and project management are discussed and analyzed.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 351 or STAT 702.

Typically Offered

Spring

MANGT 720 - Managing Organizational Behavior**Credits 3**

An in-depth analysis of the development of the behavioral bases of individual and group behavior in business, governmental, educational, and other organizations with emphasis on current research literature and applications.

Repeat for Credit

Y

Requisites

Prerequisite: Open only to students in graduate business degree or certificate programs or with permission of the instructor.

Typically Offered

Fall, Summer

MANGT 725 - Organizational Management and Data Analytics**Credits 3**

This course exposes students to a diverse set of research methods and data analytic techniques used to address organizational management problems. Students engage in experiential learning to develop their capabilities in collecting, organizing, analyzing, and visualizing data, making inferences from data analytic processes, and communicating solutions to organizational stakeholders through storytelling.

Repeat for Credit

N

Typically Offered
Spring

MANGT 815 - Advanced Managerial Consulting

Credits 3

This course provides an overview of the management consulting process. Students will learn how to apply consulting tools and frameworks to engage clients, analyze organizational problems, formulate and present recommendations, and implement change initiatives. The content is relevant to anyone interested in analyzing internal business opportunities, tasked with managing organizational change, or those pursuing traditional consulting careers.

Repeat for Credit
N

Typically Offered
Spring

MANGT 825 - Advanced Business Law

Credits 3

A study of civil law as it affects commercial transactions, including corporations, partnerships, property, commercial paper, and secured transactions.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate student standing.

Typically Offered
Spring

MANGT 840 - Advanced Entrepreneurship

Credits 3

An in-depth examination of the nature of entrepreneurship including success factors, the requirements of successful new venture planning and implementation, and researching the current literature in the field. The study of new product identification, the assessment of commercial potential, and the elements of an effective business plan will be examined in detail, culminating in the preparation of a comprehensive plan for the development and marketing of a new product

or service.

Repeat for Credit
Y

Requisites
Prerequisite: FINAN 715, MANGT 720, and MKTG 890.

Typically Offered
On sufficient demand

MANGT 845 - Technology Entrepreneurship and Strategy

Credits 3

In this course the student will learn how to recognize and screen technology opportunities in diverse areas such as telecommunications to biotechnology; learn the intricacies of intellectual property creation, protection and acquisition; effectively implement the commercialization process. A major objective of the course is to help students realize that technology may be the most under-utilized asset in either the private or public sector yet, in the form of licenses or rights to use, can be sold repeated with a relatively low cost of goods sold, resulting in a continual stream of income.

Repeat for Credit
Y

Typically Offered
On sufficient demand

MANGT 853 - Business Project Management

Credits 3

Provides an in-depth coverage of project management concepts and methodologies required for service and manufacturing operations. Topics to be covered include, but are not limited to: project selection and evaluation, project dynamics, motivation and evaluation of project team members, project scheduling, project budgeting, and project closure.

Note
This course is restricted to students in graduate business degree. Students from other programs must receive permission from the College of Business Graduate Program Coordinator.

Repeat for Credit
N

Requisites

Prerequisites: Open only to students in graduate business degree.

Typically Offered

Fall, Spring

MANGT 860 - Managing the Triple Bottom Line Business**Credits 3**

Examines how organizations can deliver sustainable social, environmental, and economic benefits to a plurality of stakeholders. Topics include best practices for business ethics, corporate social responsibility, and triple bottom line management.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 710, FINAN 715, MKTG 705, MANGT 710, MANGT 720, MIS 830, ECON 815 and STAT 703.

Typically Offered

Fall, Spring

MANGT 867 - Enterprise Information Systems Management**Credits 3**

Concepts and information resource management techniques are integrated into a conceptual framework of enterprise information systems. The impact of current issues and new technologies on business is emphasized through discussion and application.

Repeat for Credit

Y

Typically Offered

Spring

MANGT 870 - Managing Animal Health Organizations**Credits 3**

Relevant theoretical concepts will be drawn from strategic management, management of change, human resource management, and the management of innovation to provide and intellectual grounding for understanding industry dynamics and the analysis of contemporary managerial challenges and issues for organizations in the animal health industry. Special emphasis will be given to proposing strategic solutions to solve major problems that companies face in the animal health corridor.

Repeat for Credit

N

Typically Offered

Other

MANGT 880 - Strategic Management**Credits 3**

Graduate capstone course that requires integration of knowledge gained in prior functional coursework and application of strategic management concepts to develop value-creating solutions to business challenges. Students develop the knowledge and skills necessary to identify and analyze strategic issues, formulate strategic plans, and implement strategic initiatives within organizations.

Repeat for Credit

Y

Requisites

Prerequisite: ACCTG 710, FINAN 715, MKTG 705, MANGT 710, MANGT 720, MIS 830, ECON 815, and STAT 703.

Typically Offered

Fall

MANGT 890 - International Management**Credits 3**

Analysis of the political, legal, economic, and sociocultural environments and how they influence international management decisions such as timing and place of foreign market entry, mode of entry, and formulation and implementation of international strategies. Students develop the knowledge and skills necessary to more effectively manage the international operations of organizations.

Repeat for Credit

N

Typically Offered

Fall, Spring

MANGT 892 - International Operations Management

Credits 3

Explores the global market context and the environment for multinational operations. Examines important tools, concepts, theories, models, and structures as defined and applied to manufacturing and service operations in other countries. Emphasis is placed on Japanese technology and practices. It draws upon those aspects of manufacturing and service operations that can help U.S. firms become increasingly competitive worldwide.

Repeat for Credit

Y

Requisites

Prerequisite: MANGT 590 and MANGT 710.

Typically Offered

On sufficient demand

MANGT 893 - Management Science

Credits 3

The application of management science methods to business problems to provide a basis for rational decision making. Includes mathematical programming, inventory theory, simulation, model building, and heuristics.

Repeat for Credit

Y

Requisites

Corequisite: MATH 205, STAT 351 or STAT 702

Typically Offered

On sufficient demand

MANGT 897 - Topics in Management Contemporary Issues in Management

Credits 3

Discussion and analysis of contemporary issues in

management, including applications, development and study of relevant literature and research findings.

Repeat for Credit

Y

Requisites

Prerequisite: MANGT 720, MANGT 710 and MANGT 830.

Typically Offered

Spring

MANGT 898 - Special Problems in Management

Credits 1-18

As scheduled. An in-depth study of specified topics.

Note

Consent of the instructor

Repeat for Credit

Y

Typically Offered

Other

MATH 010 - Intermediate Algebra

Credits 3

Preparatory course for MATH 100. Includes arithmetic (signed numbers, polynomials, algebraic fractions, exponents, and roots), solutions to equations (linear, quadratic, polynomial, root, and fractional), graphs (linear and quadratic), and geometry (area, perimeter, and the Pythagorean Theorem).

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MATH 011 - Intermediate Algebra Review

Credits 2

Supplemental algebra lab that is required to be taken in conjunction with MATH 010.

Note

Two hours recitation a week. The student will receive 2 hours credit which will not count toward graduation.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MATH 020 - College Algebra Review**Credits 2**

Supplemental algebra lab to be taken in conjunction with MATH 100 for students who need additional instruction in algebra.

Note

Two hours recitation a week.

Students are placed in this course on the basis of their score on the placement exam. The student will receive 2 hours credit which will not count toward graduation.

Repeat for Credit

N

Typically Offered

Fall, Spring

MATH 100 - College Algebra**Credits 3**

Fundamental concepts of algebra; algebraic equations and inequalities; functions and graphs; zeros of polynomial functions; exponential and logarithmic functions; systems of equations and inequalities.

Repeat for Credit

N

Requisites

Prerequisite: A test score equal to or greater than, Math ACT 22 OR Math SAT 540 OR ALEKS PPL 46 OR Accuplacer QAS 326; OR (HS GPA 3.25 AND grade of B- or better in Algebra 2 or Integrated Math 3).

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 101 - College Algebra Support**Credits 2**

Note: College Algebra Support credits cannot count towards the 120 credits of the degree program. This course was designed through the Kansas Board of Regents Math Pathways initiative. Students who do not meet one of the multiple placement measures must enroll concurrently in MATH 101 and MATH 100.

College Algebra Support is the corequisite support course for MATH 100 - College Algebra. The support course provides additional review of the background knowledge and foundational skills which promote student success in MATH 100. The content of MATH 101 is directly aligned with the course objectives of MATH 100.

Note

MATH 101 is the KBOR math pathways corequisite course for the college algebra course. Students that do not meet any of the KBOR multiple placement measures must also enroll in MATH 101 as the corequisite course to MATH 100.

Repeat for Credit

N

Requisites

Corequisite: MATH 100

Typically Offered

Fall, Spring, Summer

MATH 150 - Plane Trigonometry**Credits 3**

Trigonometric and inverse trigonometric functions; trigonometric identities and equations; applications involving right triangles and applications illustrating the laws of sines and cosines.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 100; OR a test score equal to or greater than, MATH ACT 24 OR MATH SAT 590 OR ALEKS PPL 61 OR Accuplacer QAS 270,

OR (HS GPA 3.5 AND grade of A- or better in Algebra 2).

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 151 - Applied Plane Trigonometry

Credits 2-3

Trigonometry and inverse trigonometric functions, trigonometric identities and equations; applications involving right triangles and applications illustrating the laws of sines and cosines. Emphasis is placed on applications to engineering technology, tool and machine design.

Note

Two hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MATH 160 - Introduction to Contemporary Mathematics

Credits 3

Mathematics as used in the contemporary world. Combinatorics and probability; descriptions of data; graph theory; and various additional topics selected by the individual instructors.

Repeat for Credit

N

Requisites

Prerequisite: A test score equal to or greater than, Math ACT 19 OR Math SAT 510 OR ALEKS PPL 30 OR Accuplacer QAS 255, OR (HS GPA 3.00 AND grade of C- or better in Algebra 2 or Integrated Math 3) OR MATH 100.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MATH 161 - Contemporary Mathematics Support

Credits 1

Note: Contemporary Mathematics Support credits cannot count towards the 120 credits of the degree program. This course was designed through the Kansas Board of Regents Math Pathways initiative. Students who do not meet one of the multiple placement measures must enroll concurrently in MATH 161 and MATH 160.

Contemporary Mathematics Support is the corequisite support course for MATH 160 - Contemporary Mathematics. The support course provides additional review of the background knowledge and foundational skills which promote student success in MATH 160. The content of MATH 161 is directly aligned with the course objectives of MATH 160.

Note

MATH 161 is the KBOR math pathways corequisite course for the contemporary math course. Students that do not meet any of the KBOR multiple placement measures must also enroll in MATH 161 as the corequisite course to MATH 160.

Repeat for Credit

N

Requisites

Corequisite: MATH 160

Typically Offered

Fall or Spring

MATH 199 - Undergraduate Mathematics Seminar

Credits 1-5

Topics of special interest to undergraduates in mathematics, including orientation to the mathematics curriculum, possible careers in mathematics, and cultural and professional aspects of mathematics.

Repeat for Credit

Y

Typically Offered

Fall

MATH 205 - General Calculus**Credits 3**

Introduction to calculus concepts that are particularly useful to the study of economics and business administration with special emphasis on working problems.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 100 OR MATH 120 OR MATH 150; OR a test score equal to or greater than MATH ACT 24 OR MATH SAT 590 OR ALEKS PPL 61 OR Accuplacer QAS 270, OR (HS 3.5 AND grade of A- or better in Algebra 2).

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MATH 210 - Technical Calculus I**Credits 3**

A condensed course in analytic geometry and differential calculus with an emphasis on applications.

Repeat for Credit

N

Typically Offered

Fall

MATH 211 - Technical Calculus II**Credits 3**

A continuation of MATH 210 to include integral calculus with an emphasis on application.

Repeat for Credit

N

Typically Offered

Spring

MATH 215 - Calculus I**Credits 5**

Course content includes a brief review of pre-calculus materials of algebra and trigonometry, functions, limits, differentiation, applications of differentiation, integration, and applications of the definite integral. Theory is presented in a style tailored for first-semester students of mathematics.

Note

Five hours recitation a week.

Repeat for Credit

N

Typically Offered

Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 216 - Calculus II**Credits 5**

An extension of MATH 215, Calculus I, to include integration, differentiation, and applications of transcendent functions.

Note

Five hours recitation a week.

Repeat for Credit

N

Typically Offered

Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 220 - Analytic Geometry and Calculus I**Credits 4**

Analytic geometry, differential and integral calculus of algebraic and trigonometric functions.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 120 OR MATH 150; OR a test score equal to or greater than MATH ACT 28 OR MATH SAT 660 OR ALEKS PPL 76 OR Accuplacer QAS 280, OR HS Precalc grade of A- or better OR HS Calc grade of B- or better.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 221 - Analytic Geometry and Calculus II**Credits 4**

Continuation of MATH 220 to include transcendental functions, techniques of integration, and infinite series.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 220 OR MATH 250 OR Calculus AB AP score of 3 or above.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 222 - Analytic Geometry and Calculus III**Credits 4**

Continuation of MATH 221 to include functions of more than one variable.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251 OR Calculus BC AP score of 3 or above.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MATH 250 - Mathematical Scholars Calculus 1**Credits 4**

A rigorous introduction to the central ideas and techniques of calculus where students will be exposed to both the computational and conceptual underpinnings of calculus including functions, graphs, limits, continuity, derivatives and integrals. Enrollment is not restricted to students in the Mathematical Scholars Program.

Note

Cannot be taken for credit if credit has been received for MATH 220. Permission of the Mathematical Scholars Director or Enrollment in the Program

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

MATH 251 - Mathematical Scholars Calculus 2**Credits 4**

A continuation of MATH 250 where students will be trained in both the computational and conceptual underpinnings of calculus including techniques of integration, transcendental functions, infinite sequences and infinite series.

Note

Cannot be taken for credit if credit has been received for MATH 221.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 250.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MATH 312 - Finite Applications of Mathematics**Credits 3**

Systems of equations, vector operations, linear algebra, and linear programming. Practice in setting up, solving, and interpreting mathematical models which arise in social sciences and business.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 100 OR MATH 120 OR MATH 150 OR MATH 205 OR MATH 220.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MATH 313 - Computational Number Theory**Credits 3**

Topics in number theory selected from: divisibility, primes, modular arithmetic and special types of numbers. Emphasis is on computations. Primarily for prospective elementary school teachers of mathematics.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing, MATH 100.

Typically Offered

Spring

MATH 320 - Mathematics for Elementary School Teachers I**Credits 3**

Mathematical problem solving and reasoning, development of whole number concepts and the whole number system,

computation and estimation with whole numbers, number patterns and number theory, integers, fractions and rational numbers, decimals and real numbers, geometry and measurement.

Note

For education majors only.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 100.

Typically Offered

Fall, Spring

MATH 330 - Intuitive Geometry**Credits 3**

Geometric figures and patterns, properties of geometric figures, transformation and coordinate geometry, measurement.

Repeat for Credit

N

Requisites

Prerequisite: MATH 320.

Typically Offered

Spring

MATH 340 - Elementary Differential Equations**Credits 4**

Elementary techniques for solving ordinary differential equations and applications to solutions of problems in science and engineering.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

**MATH 350 - Mathematical Scholars Calculus
3****Credits 5**

A continuation in the sequence of courses focused on Calculus. Provides the first semester of an integrated approach to linear algebra, multivariable calculus, and ordinary differential equations with specific topics including vector spaces, linear transformations, solutions to matrix equations, dimension, rank, eigenvalues, inner products, Sylvester's Theorem, multi-linear algebra, vector valued functions, vector fields and general ordinary differential equations.

Note

Cannot be taken for credit if credit has been received for MATH 551.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 251 OR
Permission of the Mathematical Scholars Director

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

**MATH 351 - Mathematical Scholars Calculus
4****Credits 5**

A continuation in the sequence of courses focused on Calculus. Provides the second semester of an integrated approach to linear algebra, multivariable calculus, and ordinary differential equations. Students will apply knowledge from one variable calculus and linear algebra to the higher dimensional setting, but many computations will take place in the low 2 and 3 variable cases. Topics include linear ordinary differential equations, Picard's Theorem, limits and continuity in many variables, partial derivatives, optimization problems, integration of functions of several variables, Fubini's Theorem, integration of differential forms and Generalized Stokes' Theorem.

Note

Cannot be taken for credit if credit has been received for MATH 222 or 340.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 350.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MATH 395 - Academic Excellence Workshop**Credits 1-2**

This course provides enriched supplementary instruction to selected students enrolled in selected lower-division courses.

Repeat for Credit

Y

Requisites

Prerequisite: Concurrent enrollment in qualifying lower-division mathematics course and written permission of instructor.

Typically Offered

Other

MATH 399 - Honors Seminar in Mathematics**Credits 1-3**

Honors Seminar in Mathematics

Repeat for Credit

Y

Requisites

Prerequisite: Membership in honors program.

Typically Offered

Other

MATH 498 - Honors Project

Credits 3

Open only to Arts and Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Other

MATH 499 - Undergraduate Topics in Mathematics**Credits 1-18**

Reading courses in advanced undergraduate mathematics.

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for topic undertaken and consent of instructor.

Typically Offered

Fall, Spring, Summer

MATH 500 - Mathematical Theory of Interest**Credits 3**

Extensive introduction to the mathematical theory of interest with applications to the field of actuarial science. Prepares students to take the second professional examination administered by the Society of Actuaries and the Casualty Actuarial Society.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered

Fall

MATH 501 - Mathematical Foundations of Actuarial Science**Credits 3**

Introduction to calculus-based applications and models with an emphasis on applications to insurance. Prepares students to take the first professional examination administered by the Society of Actuaries and Casualty Actuarial Society.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 222 OR MATH 351 AND corequisite STAT 510 OR STAT 610.

Typically Offered

Spring

MATH 506 - Introduction to Number Theory**Credits 3**

Divisibility properties of integers, prime numbers, congruences, multiplicative functions.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered

Spring

MATH 510 - Discrete Mathematics**Credits 3**

Combinatorics and graph theory. Topics selected from counting principles, permutations and combinations, the inclusion-exclusion principle, recurrence relations, trees, graph coloring, Eulerian and Hamiltonian circuits, block designs, and Ramsey Theory.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered
Fall, Spring, Summer

MATH 511 - Introduction to Algebraic Systems

Credits 3

Properties of groups, rings, domains and fields. Examples selected from subsystems of the complex numbers, elementary number theory, and solving equations.

Repeat for Credit
N

Requisites
Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered
Fall, Spring

MATH 512 - Introduction to Modern Algebra

Credits 3

Introduction to the basic algebraic systems, viz., groups, rings, integral domains, and fields, often drawing from elementary number theory. Special emphasis will be given to methods of theorem proving.

Repeat for Credit
N

Requisites
Prerequisite: MATH 222.

Typically Offered
Fall

MATH 515 - Introduction to Linear Algebra

Credits 3

Finite-dimensional vector spaces, linear transformations and their matrix representations, dual spaces, invariant subspaces, Euclidean and unitary spaces, solution spaces for systems of linear equations.

Repeat for Credit
N

Requisites

Prerequisite: MATH 222.

Typically Offered
Spring

MATH 520 - Foundations of Analysis

Credits 3

A study of sets and sequences, neighborhoods, limit points, convergence, open and closed sets in the real line and in the plane, the concept of a continuous function.

Repeat for Credit
N

Requisites
Prerequisite: Grade of C or better in MATH 222 OR MATH 351.

Typically Offered
Spring

MATH 521 - The Real Number System

Credits 3

An extensive development of number systems, with emphasis upon structure. Includes systems of natural numbers, integers, rational numbers, and real numbers.

Repeat for Credit
N

Requisites
Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered
Fall

MATH 540 - Advanced Ordinary Differential Equations

Credits 3

First-order scalar equations: geometry of integral curves, symmetries and exactly soluble equations; existence, uniqueness and dependence on parameters with examples. Systems of first-order equations, Hamilton's equations and classical mechanics, completely integrable systems. Higher-order equations. Initial value problems for second order linear equations, series solutions and special

functions. Boundary value problems with applications.
Introduction to perturbation theory and stability.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 340 OR
MATH 351.

Typically Offered

Spring

MATH 551 - Applied Matrix Theory

Credits 3

Matrix algebra, solutions to systems of linear equations,
determinants, vector spaces, linear transformations,
eigenvalues, linear programming, approximation
techniques.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 205 OR
MATH 220 OR MATH 250.

Typically Offered

Fall, Spring, Summer

MATH 560 - Introduction to Topology

Credits 3

An introduction to the basic topological concepts.
Topological spaces, metric spaces, closure, interior, and
frontier operators, subspaces, separation and countability
properties, bases, subbases, convergence, continuity,
homeomorphisms, compactness, connectedness, quotients
and products. The course will include a brief introduction
to proof techniques and set theory. Other topics in topology
also may be included.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 222 OR
MATH 351.

Typically Offered

Spring

MATH 570 - History of Mathematics

Credits 3

A survey of the development of mathematics from ancient
to modern times.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 220 OR
MATH 250.

Typically Offered

Spring

MATH 572 - Foundations of Geometry

Credits 3

Euclidean, non-Euclidean, and finite geometries; role of
axioms; practice proving theorems in a formal system;
synthetic, metric, and transformation approaches to
Euclidean geometry.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR
MATH 251.

Typically Offered

Fall

**MATH 591 - Topics in Mathematics for
Teachers**

Credits 1-3

Topics of importance for teachers of mathematics.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

MATH 599 - Topics in Mathematics

Credits 1-3

Courses on special topics.

Repeat for Credit
Y

Typically Offered
On sufficient demand

MATH 615 - Introduction to Digital Image Processing

Credits 3

The basic ideas and techniques in digital image processing stem from mathematics, engineering, and computer science. This course focuses on ideas and techniques such as spatial filtering, frequency filtering (Fast Fourier Transform), scale filtering (Fast Wavelet Transform), and their applications to image compression standards and image recognition. This course will place equal emphasis on the mathematical ideas and their applications.

Repeat for Credit
N

Requisites
Prerequisite: Grade of C or better in MATH 220 OR MATH 250.

Typically Offered
Spring

MATH 620 - Convex Optimization for Data Science

Credits 3

Convex optimization is an essential tool in data science and underlies many machine learning algorithms. This course provides students with the necessary tools, skills, vocabulary, and techniques, that will allow them to become life-long users of convex optimization in the context of data analysis.

Repeat for Credit

N

Requisites
Prerequisite: Grade of C or better in MATH 222 OR MATH 351.

Typically Offered
On sufficient demand

MATH 630 - Introduction to Complex Analysis

Credits 3

Complex analytic functions and power series, complex integrals. Taylor and Laurent expansions, residues, Laplace transformations, and the inversion integral.

Repeat for Credit
N

Requisites
Prerequisite: Grade of C or better in MATH 222 OR MATH 351.

Typically Offered
Fall

MATH 632 - Elementary Partial Differential Equations

Credits 3

Orthogonal functions, Fourier series, boundary value problems in partial differential equations.

Repeat for Credit
N

Requisites
Prerequisite: Grade of C or better in MATH 222 AND MATH 340; OR grade of C or better in MATH 351.

Typically Offered
Spring

MATH 633 - Advanced Calculus I

Credits 3

Functions of one variable; limits, continuity, differentiability, Riemann-Stieltjes integral, sequences,

series, power series, improper integrals.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 222 OR MATH 351.

Typically Offered

Fall

MATH 634 - Advanced Calculus II

Credits 3

Functions of several variables; partial differentiation and implicit function theorems, curvilinear coordinates, differential geometry of curves and surfaces, vectors and vector fields, line and surface integrals, double and triple integrals, Green's Theorem, Stokes' Theorem, and Divergence Theorem.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 633.

Typically Offered

Spring

MATH 635 - Dynamics, Chaos, and Fractals

Credits 3

An introduction to one dimensional real and complex dynamics: attracting and repelling cycles, iterations of quadratic polynomials, bifurcation theory, chaos, Hausdorff measures and Hausdorff dimension, fractals, Julia and Fatou sets, and Mandelbrot sets.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251.

Typically Offered

Fall

MATH 655 - Elementary Numerical Analysis I

Credits 3

Error analysis, root finding, interpolation, approximation of functions, numerical integration and differentiation, systems of linear equations.

Note

Knowledge of a Programming Language

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 221 OR MATH 251; AND grade of C or better in MATH 350 OR MATH 515 OR MATH 551.

Typically Offered

Fall, Spring

MATH 656 - Elementary Numerical Analysis II

Credits 3

A continuation of MATH 655. Linear programming, numerical solutions of differential equations, and the use of standard packages for the solutions of applied problems.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or better in MATH 340 OR MATH 351; AND grade of C or better in MATH 655.

Typically Offered

Spring

MATH 670 - Mathematical Modeling

Credits 3

Introduction of modeling procedures. Case studies in mathematical modeling projects from physical, biological, and social sciences.

Repeat for Credit

N

Requisites

Prerequisite: 12 Credit hours of MATH courses level 500 or higher.

Typically Offered

Other

MATH 700 - Set Theory and Logic**Credits 3**

An introduction to logic, mathematical proof, and elementary set theory. Topics include elementary logic, relations, partitions, functions, cartesian products, disjoint unions, orders, construction of the natural numbers, ordinal and cardinal numbers, the Axiom of Choice, and transfinite induction. Special emphasis will be given to proving theorems.

Repeat for Credit

N

Requisites

Prerequisite: MATH 511 or MATH 512.

Typically Offered

Other

MATH 704 - Introduction to the Theory of Groups**Credits 3**

Introduction to abstract group theory, permutation groups, homomorphisms, direct products, Abelian groups. Jordan-Hölder and Sylow theorems.

Repeat for Credit

N

Requisites

Prerequisite: MATH 512.

Typically Offered

Other

MATH 705 - Computational Math**Credits 3**

Topics from complex analysis, vector calculus, higher-dimensional calculus, ordinary differential equations, linear algebra, and geometry of curves.

Repeat for Credit

N

Requisites

Prerequisite: MATH 222.

Typically Offered

Fall

MATH 706 - Theory of Numbers**Credits 3**

Divisibility, congruences, multiplicative functions, number theory from an algebraic viewpoint, quadratic reciprocity, Diophantine equations, prime numbers.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221 and either MATH 511 or MATH 512.

Typically Offered

Fall

MATH 707 - Theory of Numbers II**Credits 3**

Continuation of MATH 706, including p-adic numbers, basic analytic number theory, geometry of numbers, and diophantine approximation.

Repeat for Credit

N

Typically Offered

Spring

MATH 710 - Introduction to Category Theory**Credits 3**

Categories, duality, special morphisms, functors, natural transformations, limits and colimits, adjoint situations, and applications.

Repeat for Credit

N

Requisites

Prerequisite: MATH 730 and MATH 770.

Typically Offered

Other

MATH 711 - Category Theory**Credits 3**

Set-valued functors and concrete categories, factorization structures, algebraic and topological functors, categorical completions, Abelian categories.

Repeat for Credit

N

Requisites

Prerequisite: MATH 710.

Typically Offered

Other

MATH 713 - Advanced Applied Matrix Theory**Credits 3**

A development of the concepts of eigenvalues by considering applications in differential equations, quadratic forms and estimation problems. Supporting topics include the Jordan canonical form, functions of matrices, vector and matrix norms, convex sets, with selected topics from the theory and application of the simplex algorithm, Markov chains, Leslie population models, Leontieff input-output model.

Repeat for Credit

N

Requisites

Prerequisite: MATH 551 or MATH 630.

Typically Offered

Summer

MATH 715 - Applied Mathematics I**Credits 3**

Analysis of numerical methods for linear algebra. Perturbation theory and error analysis, matrix factorizations, solutions to linear systems, least-squares problems, techniques for special matrix structures, symmetric and nonsymmetric eigenvalue problems, iterative and direct methods.

Note

Three hours recitation.

Repeat for Credit

N

Requisites

Prerequisite: MATH 515 or MATH 551 or equivalent.

Typically Offered

Fall

MATH 716 - Applied Mathematics II**Credits 3**

Linear operator theory applied to matrix, integral and differential equations. Spectral theory, the Fredholm Alternative, least-squares and pseudo-inverses, Banach and Hilbert space techniques, Fourier series and wavelets, theory of distributions, Green's functions.

Note

Three hours recitation.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and MATH 515 or MATH 551; or equivalent.

Typically Offered

Spring

MATH 721 - Introduction to Real Analysis**Credits 3**

Limits, continuity, uniform convergence, completeness, differentiation, Riemann integration.

Repeat for Credit

N

Requisites

Prerequisite: MATH 634 or graduate standing.

Typically Offered

Fall

MATH 722 - Introduction to Functions of Several Variables

Credits 3

Analysis of functions of several variables, including differentiability, partial differentiability, maxima and minima, inverse function theorem, implicit function theorem, integration, Fubini's theorem.

Repeat for Credit

N

Requisites

Prerequisite: MATH 634 or graduate standing.

Typically Offered

Spring

MATH 723 - Complex Functions**Credits 3**

Introduction to the theory of analytic functions, designed to prepare students for the qualifying exams. Holomorphic functions, contour integrals, residue theory, conformal mapping and other topics.

Note

3 hours lecture each week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 721 is recommended

Typically Offered

Spring

MATH 725 - The Mathematics of Data and Networks I**Credits 3**

Develops the mathematical tools necessary for studying and handling large datasets and networks. Includes matrix, graph, and probability theory, dimensionality reduction, clustering, maximum likelihood, Bayesian networks, sparsification, modularity, information theory, hidden Markov chains, branching processes, electrical networks, internet mathematics, random walks, random graphs, random matrices, and search algorithms.

Repeat for Credit

N

Requisites

Recommended prerequisite: Math 551, MATH 222.

Typically Offered

Fall

MATH 726 - The Mathematics of Data and Networks II**Credits 3**

II. Continuation of MATH 725. Develops the mathematical tools necessary for studying and handling large data-sets and networks. Includes matrix, graph, and probability theory, dimensionality reduction, clustering, maximum likelihood, Bayesian networks, sparsification, modularity, information theory, hidden Markov chains, branching processes, electrical networks, internet mathematics, random walks, random graphs, random matrices, and search algorithms.

Repeat for Credit

N

Requisites

Recommended prerequisite: MATH 551, MATH 222.

Typically Offered

Spring

MATH 730 - Abstract Algebra I**Credits 3**

Groups, rings, fields, vector spaces and their homomorphisms. Elementary Galois theory and decomposition theorems for linear transformations on a finite dimensional vector space.

Repeat for Credit

N

Requisites

Prerequisite: MATH 512 or consent of instructor.

Typically Offered

Fall

MATH 731 - Abstract Algebra II**Credits 3**

Continuation of MATH 730.

Repeat for Credit

N

Requisites

Prerequisite: MATH 730 or consent of instructor.

Typically Offered

Spring

MATH 740 - Calculus of Variation

Credits 3

Necessary conditions and the Euler-Lagrange equations. Hamilton-Jacobi theory, Noether's theorems, direct methods, applications to geometry and physics.

Repeat for Credit

N

Requisites

Prerequisite: MATH 722 or equivalent.

Typically Offered

On sufficient demand

MATH 745 - Ordinary Differential Equations

Credits 3

First-order equations and applications, second-order equations and oscillation theorems, series solutions and special functions, Sturm Liouville problems, linear systems, autonomous systems and phase plane analysis, stability, Liapunov's method, periodic solutions, perturbation and asymptotic methods, existence and uniqueness theorems.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340.

Typically Offered

Fall

MATH 755 - Dynamic Modeling Processes

Credits 3

Topics to include equilibrium and stability, limit circles, reaction-diffusion, and shock phenomena, Hopf bifurcation and cusp catastrophes, chaos and strange attractors, bang-bang principle. Applications from physical and biological sciences and engineering.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and MATH 551.

Typically Offered

Other

MATH 760 - Introduction to Probability Theory

Credits 3

An introduction to the mathematical theory of probability. Material covered includes combinatorial probability, random variables, independence, expectations, limit theorems. Markov chains, random walks, and martingales.

Repeat for Credit

N

Requisites

Prerequisite: MATH 633 and STAT 510.

Typically Offered

On sufficient demand

MATH 770 - Introduction to Topology/Geometry I

Credits 3

This is the first course of a two course sequence including definitions and examples of topological spaces, simplicial complexes, topological and smooth manifolds, quotient spaces, CW complexes, projective spaces and knots. Topological properties including elementary separation, compactness, connectedness. Homotopy, the fundamental group, Covering spaces, Euler characteristics, classification of closed surfaces, differential forms, integration, Stokes' theorem, de Rham cohomology.

Repeat for Credit

N

Requisites

Prerequisite: MATH 633.

Typically Offered

Fall

**MATH 771 - Introduction to Topology/
Geometry II**

Credits 3

The second course in a two class introduction to topology at a graduate level. Second term topics include: covering spaces, Euler characteristic, classification of closed surfaces, differential forms, integration, Stokes' theorem, and de Rham cohomology.

Repeat for Credit

N

Requisites

Prerequisite: MATH 770.

Typically Offered

Spring

MATH 772 - Elementary Differential Geometry

Credits 3

Curves and surfaces in Euclidean spaces, differential forms and exterior differentiation, differential invariants and frame fields, uniqueness theorems for curves and surfaces, geodesics, introduction to Riemannian geometry, some global theorems, minimal surfaces.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340.

Typically Offered

Other

MATH 789 - Combinatorial Analysis

Credits 3

Permutations, combinations, inversion formulas, generating functions, partitions, finite geometries, difference sets, and other topics.

Repeat for Credit

N

Requisites

Prerequisite: MATH 512.

Typically Offered

Other

**MATH 791 - Topics in Mathematics for
Secondary School Teachers**

Credits 3

Topics of importance in the preparation of secondary school teachers to teach modern mathematics.

Repeat for Credit

Y

Typically Offered

Other

MATH 799 - Topics in Mathematics

Credits .5-3

Courses on special topics to be taught on sufficient demand.

Repeat for Credit

Y

Typically Offered

On sufficient demand

**MATH 801 - Numerical Solution of Differential
Equations I**

Credits 3

Single and multistep methods for initial-value problems for ordinary differential equations; discretization and round-off error; consistency, convergence, and stability of these methods; stiff equations and implicit methods; two-point boundary value problems; initial and boundary-value problems for partial differential equations; finite difference methods; marching schemes for parabolic and hyperbolic problems; consistency, stability, convergence, and the Lax equivalence theorem; treatment of boundary conditions; boundary-value problems for elliptic equations; relaxation, alternating direction, and strongly-implicit iterative methods; nonlinear problems; finite element method.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 655 and knowledge of a programming language.

Typically Offered

Fall

MATH 802 - Numerical Solution of Differential Equations II**Credits 3**

Continuation of MATH 801.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 801.

Typically Offered

Spring

MATH 810 - Higher Algebra I**Credits 3**

Theory of groups, theory of rings and ideals, polynomial domains, theory of fields and their extensions.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 731.

Typically Offered

Fall

MATH 811 - Higher Algebra II**Credits 3**

Continuation of MATH 810.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 810.

Typically Offered

Spring

MATH 812 - Homological Algebra I**Credits 3**

Introduction to the basics of homological and cohomological delta functors with applications to specific categories. Topics include Abelian categories, functors, exactness, chain complexes and maps, cochain complexes and maps, projective and injective resolutions, left and right derived functors, homological dimension, double complexes, spectral sequences, Tor and Ext functors, cohomology of groups, Lie algebras, and Hochschild homology.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 811.

Typically Offered

Fall

MATH 813 - Homological Algebra II**Credits 3**

Introduction to special homology and cohomology theories. Topics include Galois cohomology, cyclic homology, local cohomology theories, localization, derived categories, and the calculus of fractions in Abelian categories.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 812.

Typically Offered

Spring

MATH 814 - Lie Algebras and Representations I**Credits 3**

Introduction to Lie algebras. Topics include ideals, homomorphisms, nilpotent and solvable algebras, radicals,

killing forms, Cartan subalgebras, semisimple Lie algebras and root systems, classification of semisimple Lie algebras, conjugacy theorems, enveloping algebras and PBW theorems, Serre relations, and constructions of semisimple Lie algebras and their enveloping algebras.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 811.

Typically Offered

Fall-Odd Years

MATH 815 - Lie Algebras and Representations II

Credits 3

Introduction to Kac-Moody algebras and their representations, Verma modules and BGG categories, and the Kac-Weyl character formula. In addition, special topics include quantum groups and their representations.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 814.

Typically Offered

Spring-Odd Years

MATH 816 - Algebraic Geometry I

Credits 3

Introduction to affine algebraic varieties over algebraically closed fields. Topics include Hilbert Nullstellensatz, Zariski topology, morphisms, differentials, smoothness, separability, and normality, algebraic and projective varieties, sheaf theory, sheaf cohomology, and vector bundles.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 811.

Typically Offered

Fall

MATH 817 - Algebraic Geometry II

Credits 3

Introduction to schemes. Topics include categories, representable functors, prime spectra, algebraic schemes, separable schemes, normal schemes, proper schemes, schemes with bases, completions, formal schemes, Zariski's Theorem, Frobenius morphisms, and etale morphisms.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 816.

Typically Offered

Spring

MATH 818 - Introduction to Algebraic Groups I

Credits 3

Introduction to algebraic groups. Topics include a review of algebraic geometry on varieties and morphisms, Lie algebras of algebraic groups, actions of algebraic groups over algebraic varieties, Jordan-Chevalley decompositions, solvable and unipotent algebraic groups, radicals and unipotent radicals, Borel subgroups, and parabolic subgroups.

Repeat for Credit

N

Requisites

Prerequisite: MATH 811.

Typically Offered

Fall-Even Years

MATH 819 - Introduction to Algebraic Groups II

Credits 3

Introduction to reductive and semisimple algebraic groups, Bruhat decompositions, flag varieties, cohomology groups of line bundles over flag manifolds, Chevalley groups and their representations, Weyl modules and classification of irreducible modules, group functors and schemes, Hopf algebras and their representations.

Repeat for Credit

N

Requisites

Prerequisite: MATH 818.

Typically Offered

Spring-Even Years

MATH 821 - Real Analysis**Credits 3**

Measure theory and integration, Lebesgue integration, L_p -spaces, Hilbert spaces, integration on product spaces, Fubini's theorem.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 721 and MATH 722.

Typically Offered

Fall

MATH 822 - Real Analysis II**Credits 3**

Measure and integration on locally compact spaces: Radon measures, the Riesz Representation Theorem. Signed measures and differentiation: Lebesgue decomposition, Radon-Nikodym theorem, Differentiation of measures. Some topics on Probability (e.g., probability measures, the Central Limit Theorem, the Law of Large Numbers) or on Harmonic analysis groups, depending on the interests of students in class

Repeat for Credit

N

Requisites

Prerequisite: MATH 821.

Typically Offered

Spring

MATH 823 - Geometric Function and Measure Theory I**Credits 3**

Topics include general measure theory, covering theorems, Hausdorff measure, area and coarea formulas, distributions, Sobolev spaces, Poincaré inequalities, embeddings theorem, changes of variables, extensions, and capacity. Applications include quasiconformal and quasiregular maps in $\mathbb{R}^n$ and analysis on fractals.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 821.

Typically Offered

Fall

MATH 824 - Geometric Function and Measure Theory II**Credits 3**

Continuation of Geometric Function and Measure Theory I.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 823.

Typically Offered

Spring

MATH 825 - Complex Analysis I**Credits 3**

Holomorphic functions, harmonic functions, the Cauchy integral theorem, normal families and the Riemann mapping theorem, and the Mittag-Leffler theorem.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 822 or consent of department.

Typically Offered

Fall

MATH 826 - Complex Analysis II**Credits 3**

Analytic continuation, the Picard theorem, H_p -spaces, elementary theory of Banach algebra, the theory of Fourier transforms, and the Paley-Wiener theorems.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 825.

Typically Offered

Spring

MATH 827 - Classical and Modern Fourier Analysis I

Credits 3

Topics include Fourier analysis on the circle, singular integrals of convolution type, Littlewood-Paley theory and multipliers, BMO and Carleson Measures, and boundedness and convergence of Fourier integrals (or singular integrals of nonconvolution type).

Repeat for Credit

Y

Requisites

Prerequisite: MATH 821.

Typically Offered

Fall

MATH 828 - Classical and Modern Fourier Analysis II

Credits 3

Continuation of Classical and Modern Fourier Analysis I.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 827.

Typically Offered

Spring

MATH 830 - Algebraic Number Theory

Credits 3

Topics include lattice theory, geometry of numbers, algebraic number fields, Dedekind domains, discrete valuation rings, ideal class group, group units, cyclotomic fields, Galois extensions.

Repeat for Credit

N

Requisites

Prerequisite: MATH 706, MATH 730.

Corequisite: MATH 731.

Typically Offered

Spring

MATH 831 - Analytic Number Theory

Credits 3

Potential topics include; prime number theorem characters, L-functions, Diophantine problems, exponential sums, p-adic analysis, Diophantine approximations, Sieve Methods, Circle method.

Repeat for Credit

N

Requisites

Prerequisite: MATH 630, MATH 633, MATH 706.

Typically Offered

Spring

MATH 840 - Differential Equations I

Credits 3

Basic ordinary and partial differential equations. First-order ordinary differential equations: symmetries and solutions in quadratures; existence, uniqueness and dependence on parameters, systems of first order equations, analysis of equilibria. Second order equations: series solutions and special functions, initial- and boundary-value problems for second-order equations. Elements of integral equations. First-order partial differential equations. Basic second-order partial differential equations: wave equations, heat equations, Poisson equation, Schrodinger equation.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 634 or MATH 745 or consent of instructor.

Typically Offered

Fall

MATH 841 - Differential Equations II**Credits 3**

Where PDEs come from. Initial and boundary-value problems. A crash course in distribution theory: different spaces of distributions, Fourier and Laplace transformations of distributions, Sobolev spaces. The Poisson equation in bounded and in exterior domains; properties of solutions of elliptic equations. The classical evolution equations revisited. Energy estimates, existence and uniqueness theorems, regularity and other properties of solutions. Simple examples of nonlinear PDEs.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 840.

Typically Offered

Spring

MATH 842 - Differential Equations III**Credits 3**

Continuation of MATH 841.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 841.

Typically Offered

Spring

MATH 843 - Advanced Probability I**Credits 3**

Review of measure theory notions specific to probability, including classical limit theorems, constructions of Brownian motion, Stochastic integration, the martingale representation theorem and martingale-based function

spaces.

Repeat for Credit

N

Requisites

Prerequisite: STAT 510 and MATH 821.

Typically Offered

Fall

MATH 844 - Advanced Probability II**Credits 3**

Topics may include stochastic processes, random matrix theory, free probability, random fractals and random analytic maps.

Repeat for Credit

N

Requisites

Prerequisite: MATH 843.

Typically Offered

Spring

MATH 852 - Functional Analysis I**Credits 3**

Topological vector spaces; locally convex spaces (Hahn-Banach Theorem, weak topology, dual pairs, Krein-Milman Theorem, theory of distributions); Banach spaces (Uniform Boundedness Principle, Open Mapping Theorem and applications, Alaoglu's Theorem, analytic vector-valued functions, Krein-Smulian Theorem); $C(X)$ as a Banach space (Stone-Weierstrass Theorem, Riesz Theorem); L_p spaces.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 821.

Typically Offered

Other

MATH 853 - Functional Analysis II

Credits 3

Banach Algebras (spectrum, Gelfand Fourier transform, holomorphic functional calculus); Hilbert spaces (geometric properties, Riesz's Theorem, projections, the adjoint); functional calculus for normal operators; compact operators (spectral properties, Min-Max Theorem, Schatten-vol Neumann classes); Fredholm operators; other operator topologies on $B(H)$; unbounded self-adjoint operators. Other topics.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 852.

Typically Offered

Other

MATH 855 - Methods of Applied Mathematics I**Credits 3**

An introduction to the mathematical techniques of problem solving in the sciences and engineering. Construction of mathematical models; problem formulation, dimensional analysis and scaling; solution methods for differential equations and difference equations; methods for obtaining approximate solutions; regular and singular perturbations methods, asymptotic series, applications to specific equations and scientific problems.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 630, MATH 633 and MATH 551.

Typically Offered

Fall

MATH 856 - Methods of Applied Mathematics II**Credits 3**

A continuation of MATH 855. Asymptotic expansion of integrals; the methods of stationary phase and steepest descent; summations of series, the Shanks transformation and the Pade fractions; boundary layer theory; the WKB and Langer approximations; the method of averaging and

the method of multiple scales.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 855.

Typically Offered

Spring

MATH 857 - Nonlinear Analysis I**Credits 3**

The course deals with studies of nonlinear operator equations, existence of their solutions, uniqueness of the solutions, numerical methods for finding solutions. Fixed point theorems, topological principles, nonlinear elliptic equations and evolution equations, ill-posed and inverse problems are discussed.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 821, MATH 822, MATH 852, MATH 853 and MATH 840 is recommended.

Typically Offered

Fall

MATH 861 - Numerical Analysis I**Credits 3**

Topics covered may include elementary functional analysis relevant to numerical analysis; numerical solution of differential or integral equations; analysis of stability and convergence; numerical linear algebra including large-scale systems; approximation theory.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 634 and MATH 655.

Typically Offered

Fall

MATH 862 - Numerical Analysis II

Credits 3

Continuation of MATH 861.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 861.

Typically Offered

Spring

MATH 864 - Theory of Ordinary Differential Equations I

Credits 3

The modern theory of ordinary differential equations including general theory and the theory of linear differential equations.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 722 and MATH 731.

Typically Offered

Fall

MATH 865 - Theory of Ordinary Differential Equations II

Credits 3

Continuation of MATH 864 to include nonlinear equations and differential equations in Banach spaces.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 864.

Typically Offered

Spring

MATH 875 - Algebraic Topology I

Credits 3

Homology and cohomology; simplicial, singular, cellular, and axiomatic theories; cup products; universal coefficient and Kunneth theorems; Hurewicz theorem in dimension one; orientation of manifolds; degree of maps spectral sequences, Whitehead's theorem.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 771, MATH 731.

Typically Offered

Fall-Even Years

MATH 876 - Algebraic Topology II

Credits 3

Continuation of MATH 875. Fibrations, cofibrations, higher homotopy groups, characteristic classes, sheaves, rational homotopy theory, simplicial objects, spectra, K-theory.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 875.

Typically Offered

Spring-Odd Years

MATH 877 - Classical and Quantum General Relativity

Credits 3

A self contained introduction to general Relativity, followed by a mathematical introduction to quantum mechanics and quantum field theory. Course culminates in review of current approaches to quantizing general Relativity.

Repeat for Credit

N

Typically Offered

Fall

MATH 881 - Differential Topology

Credits 3

Tangent spaces and tensor bundles; derivatives; inverse function theorem, Sard's theorem and applications; vector fields and flows; Morse functions; handle decompositions; embedding theorems; orientations and orientability via tangent bundles; intersection theory; cobordism theory.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 771, MATH 722.

Typically Offered

Fall-Odd Years

MATH 882 - Differential Geometry

Credits 3

Riemannian metrics, covariant derivatives, Gauss curvature, Riemann curvature; Gauss-Bonnet theorem; Exponential map and normal coordinates; The Hopf-Rinow Theorem; Jacobi fields; The Cartan-Hadamard Theorem; Ricci curvature and Myers' and Bonnet's Theorems; selected topics and Kähler geometry; symplectic topology; gauge theory.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 881.

Typically Offered

Other

MATH 890 - Riemann Surfaces

Credits 3

Introduction to Riemann Surfaces. Topics will include complex charts, complex structures, holomorphic and meromorphic maps (and functions), order of poles and zeros, covering spaces, monodromy of holomorphic maps, differential forms, DeRham cohomology groups, integration on Riemann surfaces, Čech cohomology of sheaves, compact Riemann surfaces, finite theorems, divisors and sheaves of meromorphic forms, and the Riemann-Roch Theorem.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 811, and MATH 822.

Typically Offered

Spring

MATH 896 - Topics in Mathematics

Credits .5-18

Topics in Mathematics

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for topic undertaken and consent of instructor.

Typically Offered

Fall, Spring, Summer

MATH 897 - Seminar in Mathematics Education

Credits 1-3

Seminar in Mathematics Education

Repeat for Credit

Y

Typically Offered

Spring, Summer

MATH 898 - Master's Research

Credits 1-18

Master's Research

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MATH 899 - Thesis Topics

Credits 1-18

Thesis Topics

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MATH 920 - Theory of Groups

Credits 3

Group representations and group characters, transfer, signalizer functors, theory of pushing-up, groups of Lie type, (B, N) -pairs, chamber systems and buildings, sporadic simple groups, amalgam methods, Bass-Serre theory.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 811.

Typically Offered

Fall

MATH 924 - Several Complex Variables

Credits 3

An introduction to the theory and analytic functions of several variables, domains of homomorphy and pseudoconvexity, the Levi problem, delta bar equations, Cousin problems, zeros of analytic functions, integral formulas, holomorphic mappings.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 826.

Typically Offered

Other

MATH 925 - Group Representations and Character Theory I

Credits 3

The basic topics in representation theory are covered: Schur's Lemma, irreducibility, class functions, characters, orthogonality relations, Frobenius-Schur theorem, induced characters and Frobenius reciprocity, Mackey's theorem, Clifford's theorem, exceptional characters and applications to group orders, generalized characters and Brauer's characterizations of characters.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 811.

Typically Offered

Fall

MATH 926 - Group Representations and Character Theory II

Credits 3

Depending on the interests of the students, topics may be chosen from the following: modular representations, Brauer's theory of blocks, characters of the linear groups, homologically induced representations, representations of complex Lie algebras.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 925.

Typically Offered

Other

MATH 991 - Topics in Algebra

Credits 3

Selected topics in modern algebra.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 992 - Topics in Analysis

Credits 3

Selected topics in modern analysis.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 993 - Topics in Harmonic Analysis

Credits 3

Selected topics in harmonic analysis.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 994 - Topics in Applied Mathematics

Credits 3

Selected topics in applied mathematics.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 995 - Topics in Geometry

Credits 3

Selected topics in geometry.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 996 - Topics in Topology

Credits 3

Selected topics in topology.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 997 - Topics in Number Theory

Credits 3

Selected topics in number theory.

Note

Automorphic Forms and L-Functions. Consent of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MATH 999 - Research in Mathematics

Credits 1-18

Research in Mathematics

Repeat for Credit

Y

Requisites

Prerequisite: Sufficient training to carry on the line or research undertaken and consent of instructor.

Typically Offered

Fall, Spring, Summer

MC 100 - SMC Orientation

Credits 1

An overview of the curriculum electives, extracurricular activities in mass communications, the advising process, career options, and ways to improve student success.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 110 - Mass Communication in Society

Credits 3

A historical, social, legal, economic, and technological study of mass communication and its role and impact in society.

Note

Open to majors and non-majors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

MC 120 - Principles of Advertising

Credits 3

An examination of the advertising field and its relationship to marketing and journalism.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

MC 130 - Writing Conventions and Mechanics

Credits 1

Reorientation to basic rules of grammar, spelling and punctuation, and assessment of student writing skills prior to admission to the A.Q. Miller School. Students must receive a "C" or better to advance in JMC curriculum.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MC 131 - Elements of Media Writing

Credits 1

The basics of Associated Press writing style and writing across media platforms. Students must receive a "C" or better to advance in JMC curriculum.

Repeat for Credit

N

Requisites

Prerequisite: MC 130 with a grade of "C" or better.

Typically Offered

Fall, Spring, Summer

MC 132 - Writing Styles and Audiences

Credits 1

Basic exposure to writing across platforms for target audiences in journalism and strategic communications. Students must receive a "C" or better to advance in JMC curriculum.

Repeat for Credit

N

Requisites

Prerequisite: MC 131 with a grade of "C" or better.

Typically Offered

Fall, Spring, Summer

MC 160 - Principles of Journalism

Credits 3

An overview of the current news industry, including legacy

media and newer platforms. Introduction to news gathering and reporting, including hands-on work on the multi-platform JMC NewsDesk.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

MC 165 - KSDB-FM Participation

Credits 0

Students participate in various music, news, sports, program production and other operational roles on student radio station KSDB-FM.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MC 166 - KKSU-TV Participation

Credits 0

Exposure to basic video production roles and participation in producing a television program for KKSU-TV.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MC 180 - Principles of Public Relations

Credits 3

Contemporary persuasive social science principles, processes, and issues involved in the management of communications between an organization and its publics.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

MC 190 - Topics in Journalism and Mass Communications

Credits 1-3

Selected topics in the study of mass communication practices and principles.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MC 191 - Audio Essentials

Credits 1

Basic audio production concepts and techniques.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MC 192 - Photography Essentials

Credits 1

Builds a working knowledge of photographic theory and practical application of photo composition, editing and production using DSLR cameras and professional photo editing software. Part of the Content Creator Studio.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 193 - Video Production Essentials

Credits 1

Basic video production practices with a focus on editing concepts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MC 194 - Social Media Essentials**Credits 1**

Introduction to basic concepts and uses of social media for business and industry. Provides foundational knowledge of today's dynamic social media environment so that students may analyze successful social media programs within their future professions.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 195 - Creative Design**Credits 1**

Introduction to essential concepts and skills needed to create effective online visual content. Examines creative strategies, identifies content design techniques that attract attention, and builds skills in developing engaging copy and visuals. Part of the Content Creator Studio.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MC 196 - Content Management for Distribution**Credits 1**

Introduction to basic knowledge and skills needed to manage, structure, and distribute online content and measure content impact. Explores various content types to be used across multiple digital platforms and content strategies such as SEO and paid promotion to maximize visibility. Part of the Content Creator Studio.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 197 - Podcasting Essentials**Credits 1**

Introduces students to podcasting and uses hands-on instruction to teach foundational skills and principles in audio, content creation, audience understanding and podcast management.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 200 - News Reporting and Writing Across Platforms**Credits 3**

Instruction in news reporting and writing for publication across various media platforms.

Repeat for Credit

N

Requisites

Prerequisite: MC 130, MC 131, and MC 132, and MC 160 with a grade of C or better; OR MC 130, AGCOM 110 and MC 160 with a grade of C or better.

Typically Offered

Fall, Spring, Summer

MC 265 - Innovations in Media and Communication**Credits 3**

Examines new technological innovations and explores how technology in historical, legal, economic and social contexts combine to enable the changes thought of as innovations in media and communication.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 280 - Writing for Advertising & Public Relations

Credits 3

Examines various forms of advertising and public relations writing techniques, with special emphasis on creation of tactical messages for different media and audiences utilizing persuasion, engagement and professionalism.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 290 - Topics in Mass Communications

Credits 1-3

Selected topics in the study of mass communication principles and practices.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MC 301 - Photo & Video Storytelling

Credits 3

Explores the power of journalistic storytelling through professional still and moving images. Develops skills in shooting and retouching photographs for a wide range of genres, creating videos for commercial and journalistic applications, and developing a workflow while building your storytelling portfolio.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 306 - Photographic Storytelling

Credits 3

Equips students with the skills necessary to excel in the modern journalism landscape. Students will delve into

theoretical concepts and practical applications related to digital photography composition, editing, and workflow for convergent media. Through a blend of classroom study and hands-on experience, students will learn fundamental principles and techniques in photography, photographic copy style writing, photo editing, workflow, software, and camera operations.

Repeat for Credit

N

Typically Offered

Fall or Spring

MC 310 - What's the Score? Sports Media in Society

Credits 3

Considers the role of sports and how the way they are covered and portrayed in the media plays a role in society. Examines how gender, race and other identities are reflected in sports coverage and fandom.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

MC 316 - Interactive Journalism Design

Credits 3

Fosters AI literacy and the understanding of its potential and implications for the media industry and news production. Builds on the foundations of news storytelling, data analytics and adds interactivity techniques to help students tell dynamic journalistic stories.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MC 331 - Photography Commercial Imaging

Credits 3

Introduces advanced photography and commercial imaging techniques. Builds skill in producing professional images in commercial settings. Examines principles of lighting, photo/video editing, workflow, and monetization of work and portfolio.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 332 - Photography and Digital Storytelling Abroad**Credits 3**

Participants in this study abroad program will learn basic digital photography and profile writing techniques through the experience of meeting and telling the stories of those who live and work in Orvieto, Italy. Students will create an online platform to share their stories with the rest of the world. They will come away with a professional style portfolio piece, as well as a deeper understanding of the stories and customs of a different country.

Note

This course is targeted specifically for study abroad students.

Repeat for Credit

N

Typically Offered

Summer

MC 340 - Editing for Print and Online Media**Credits 3**

Fundamentals of micro and macro journalistic editing for print and digital media including industry standards, practices, and ethics.

Repeat for Credit

N

Requisites

Prerequisite: MC 200, or MC 221, or MC 280 with a grade of C or better.

Typically Offered

Fall

MC 341 - Immersive Digital Storytelling**Credits 3**

Builds on theories and concepts of visual communication. Uses special equipment and software programs to introduce concepts and build skills in brainstorming, sketching, filming, modeling, editing, producing visual effects and immersive experiences, and distributing extended reality (XR) stories for both traditional and emerging media platforms.

Repeat for Credit

N

Requisites

Recommended Foundation Course: MC 316

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MC 345 - Application of Layout and Printing techniques in Agriculture and Natural Resources**Credits 3**

Advances students' understanding of how industry-adopted software and hardware are used to develop print media, from individual use to integrating a variety of software and hardware in production.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: AGCOM 210 or MC 341

Typically Offered

Fall

Crosslisted

AGCOM 345

MC 360 - Theories in Strategic Communication

Credits 3

An examination of persuasion and behavior change theories as applied to advertising and public relations messages.

Repeat for Credit

N

Requisites

Prerequisites: MC 120 or MC 180 with a C or better, or instructor permission.

Typically Offered

Fall, Spring, Summer

MC 365 - Writing in the Digital Economy

Credits 3

Examines writing in an information and attention economy from a globalized digital perspective. Along with brief introductions to economic theory, the course will discuss and debate the role of writers and content producers within the context of digital delivery and distribution. No prior experience with economic theory is needed.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 370 - Social Media in Strategic Communications

Credits 3

Strategic methods and approaches for messaging via social media platforms.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MC 374 - Social Media Content Development

Credits 3

Builds skills in translating ideas into authentic, interactive and meaningful social media content through compelling imagery, video, design, and writing. Covers tools and techniques needed to develop a social media content roadmap for creating engaging content across multiple platforms.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 375 - Social Media Influencing & Personal Branding

Credits 3

Develops skills in working with social media influencers and building personal influence. Examines concepts related to building and analyzing personal brands, creatively designing influencer campaigns, engaging and persuading online audiences, and understanding the legalities of influencing.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 390 - Topics in Journalism and Mass Communications

Credits 1-3

Selected topics in the study of mass communications practices and principles.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MC 396 - Research for Advertising and Public Relations

Credits 3

Examines how research data and insights inform successful advertising and public relations strategy. Explores concepts and skills in research methods, database analysis, results communication and visualization, and research-strategy connection.

Repeat for Credit

N

Typically Offered

Fall, Spring

MC 399 - Honors Seminar in Mass Communications

Credits 3

Honors Seminar in Mass Communications

Repeat for Credit

N

Requisites

Prerequisite: Honors students only.

Typically Offered

Other

MC 403 - Advanced Reporting and Writing Across Platforms

Credits 3

Intensive course emphasizing advanced reportorial principles and practices for multiple media platforms.

Repeat for Credit

N

Requisites

Prerequisite: MC 200 with grade of C or better; majors have priority, others by department consent.

Typically Offered

Fall, Spring

MC 405 - Perfect Podcasting

Credits 3

Focuses on the history, form, and functions of podcasting as a mass communication tool that is increasingly replacing

broadcast radio as America's audio delivery system of choice.

Note

Nonfictional and fictional narratives, spoken word content, public service, current events-based reports, music, and a variety of "chum casts"—just a few of podcasting's ever-developing art forms—will be unpacked, demonstrated, and practiced.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MC 406 - Multiplatform News Reporting

Credits 3

Advanced techniques of reporting, writing, and producing news for audio, video, and Web-related media.

Repeat for Credit

N

Requisites

Prerequisite: MC 301 with grade of C or better; majors have priority, others by department consent.

Typically Offered

Fall, Spring

MC 409 - Advanced Strategic Communications Writing

Credits 3

Strategic aspects of public relations writing and messaging through advanced types of client communications projects.

Repeat for Credit

N

Requisites

Recommended Prerequisite: MC 280 with a C or better.

Typically Offered

Fall, Spring, Summer

MC 410 - Sports Reporting

Credits 3

The study of today's sports media environment with an emphasis on reporting, writing, and producing sports stories for audio, video, print, Internet, and other platforms.

Repeat for Credit

N

Requisites

Prerequisite: MC 301 with a grade of C or better.

Typically Offered

Fall, Spring

MC 416 - Photojournalism**Credits 3**

The materials, principles, and processes of photography directed toward visual reporting in newspapers, magazines and other media.

Note

Lectures, demonstrations and laboratory.

Repeat for Credit

N

Requisites

Prerequisite: MC 331 with grades of C or better; majors have priority, others by department consent.

Typically Offered

Fall, Spring

MC 426 - Magazine Writing, Editing and Design**Credits 3**

Preparation of feature stories and articles for *Update* magazines and other publications; techniques of market analysis, and marketing of articles written in course.

Repeat for Credit

N

Requisites

Prerequisite: MC 200 with a grade of C or better; majors have priority, others by department consent.

Typically Offered

Fall, Spring

MC 436 - Magazine Production**Credits 3**

The practical application of theory to writing, editing, graphic reproduction, layout and management of magazines.

Repeat for Credit

N

Requisites

Prerequisite: MC 403.

Typically Offered

Spring

MC 445 - Digital Brand Strategy**Credits 3**

Exploration of modern digital brand strategy, focusing on the latest approaches to digital advertising, the influence of AI, implementation, and evaluation.

Repeat for Credit

N

Typically Offered

Spring

MC 446 - Media Planning**Credits 3**

Builds skills in creating and executing a media plan according to advertising/public relations business goals. Develops skills in multi-media strategy - digital, mobile, social media, tv, audio streaming, radio and print media - based on research and industry trends. Uses simulation software and covers up-to-date digital tools in media planning.

Repeat for Credit

N

Requisites

Prerequisite: MC 120 or MC 180 with a grade of C or better

Typically Offered
Fall, Spring, Summer

MC 451 - Health Communication

Credits 3

Developing strategy and messages in health communication campaigns.

Repeat for Credit
N

Requisites
Recommended Prerequisite: Sophomore standing or consent of instructor.

Typically Offered
Fall, Spring, Summer

MC 466 - Media Law and Ethics

Credits 3

A study of the legal and ethical issues relating to media, strategic communications and personal media use. Emphasis on defamation, privacy, copyright, administrative controls and other legal areas. Includes a study of ethics in the media, perfect and imperfect ethical duties, and situational ethical decision making.

Repeat for Credit
N

Requisites
Prerequisite: Junior or instructor permission.

Typically Offered
Fall, Spring

K-State 8
Ethical Reasoning and Responsibility

MC 469 - Drone Photography and Video

Credits 3

Techniques and procedures to use a Small Unmanned Aerial System (Drone) to acquire and produce video and photographic data that can be used for storytelling, advertising, short film, public relation and other media related analyses.

Repeat for Credit
N

Requisites
Prerequisite or Corequisite: UAS 115, Junior standing.

Typically Offered
Fall, Spring, Summer

MC 470 - Account Management

Credits 3

Examines the role of account managers in modern advertising agencies.

Repeat for Credit
N

Requisites
Prerequisite: MC 221 or MC 280 with a C or better is recommended.

Typically Offered
Fall, Spring, Summer

MC 471 - Advanced Production

Credits 3

Emphasis on aesthetics of audio and video writing, producing, directing, sound recording, lighting, camera work, editing, mixing, and distribution.

Note
Field and studio assignments.

Repeat for Credit
N

Requisites
Prerequisite: MC 331 or MC 406 with grade of C or better; majors have priority, others by department consent.

Typically Offered
Fall, Spring

MC 472 - Multiplatform News Production

Credits 3

An advanced production course that emphasizes producing and directing techniques for news and other information-

oriented programming.

Repeat for Credit

N

Requisites

Prerequisite: MC 406 with a grade of C or better or instructor permission. Majors have priority, others by department consent.

Typically Offered

Other

MC 474 - Social Media Management Simulation Lab

Credits 2

Uses simulation software to build experience in running a social media campaign for a business. Develops skills in multiple areas of campaign management, including content creation, budget management, impact analysis, and decision-making.

Repeat for Credit

N

Requisites

Prerequisite: MC 370 Social Media Management & Strategy

Typically Offered

Fall, Spring

MC 475 - Military Strategic Communications

Credits 3

An examination of the U.S. military in terms of operational and communication issues and its overall relationship with the media.

Repeat for Credit

N

Requisites

Prerequisite: MC 482 with a C or better or instructor consent.

Typically Offered

Fall

MC 477 - Travel and Tourism Strategic Communications

Credits 3

The role and function of advertising and public relations in travel and tourism, focusing on the development of communication strategies and tactics.

Repeat for Credit

N

Requisites

Prerequisites: MC 120 or MC 180, or instructor consent.

Typically Offered

Fall

MC 478 - Entertainment and Strategic Communications

Credits 3

Strategic communications in the entertainment industry and the role that practitioners play in the development of strategies, message development, and management

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Social Sciences

MC 479 - Strategic Communications and Sports

Credits 3

Understanding the role public relations and strategic communication play in sports. Defining strategic communication, developing communication strategy, evaluating communication channels and messages. Provides students with public relations management tools.

Repeat for Credit

N

Typically Offered

Fall

MC 482 - Ideation, Strategy and Planning for Advertising and Public Relations

Credits 3

Develops advertising and public relations skills in long-term planning, strategy, creativity, research, and meaningful evaluation and measurement. Examines concepts such as strategic planning, effective message creation, and project management.

Repeat for Credit

N

Requisites

Prerequisite: MC 280 with a grade of C or better.

Typically Offered

Fall, Spring

MC 485 - Media Practicum

Credits 1

Practical work in student media operations of the school under supervision of an instructor, preparing students for work in the various media industries. Topics include newspaper, radio, yearbook, and video.

Note

One hour of credit per semester, which equals a total of 120 work hours supervised by the instructor. Enrollment requires a study and work plan approved by the instructor of record.

Repeat for Credit

Y

Requisites

Prerequisite: Instructor permission. Recommended Foundation Course: MC 200, MC 301, or MC 406

Typically Offered

Fall, Spring, Summer

MC 490 - Topics in Journalism and Mass Communications

Credits 1-3

Selected topics in the study of mass communications practices and principles.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MC 491 - Mass Communication Internship

Credits 1-3

Supervised professional experience; reports from student and supervisor required.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor and specified MC courses. Journalism: MC 301; Strategic Communications: MC 221 or MC 280; majors have priority, others by department consent.

Typically Offered

Fall, Spring, Summer

MC 498 - Media Portfolio

Credits 3

Emphasis on enhancement of creative concepts, personal branding and portfolio development.

Repeat for Credit

N

Requisites

Prerequisite: MC 341 or instructor consent.

Typically Offered

Fall

MC 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members on the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MC 506 - Social Media News Strategies

Credits 3

Social media is an ever-changing and important part of journalism today. Learn strategies, tips and techniques to be job-ready for to maximize social media strategies, from both sides of the communications pathway, journalism and strategic communications.

Repeat for Credit

N

Typically Offered

Intersession

MC 541 - Media Audiences

Credits 3

Explores the meaning of the term "audience" and how it has undergone significant historical shifts, evolving from simply viewers to now consumers, producers, participants and performers. Topics covered include audience history and theory, audience measurement, media fandom and audience subcultures.

Note

Retake rules apply when student reenrolls.

Repeat for Credit

N

Typically Offered

Spring

MC 564 - History of Mass Communication

Credits 3

Growth and development of media and media technology in the United States and their economic, political and social significance.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring

MC 565 - Going Mobile!

Credits 3

Builds knowledge of the rapidly increasing mobile media ecosystem; techniques to attract, engage and monetize mobile consumers; and ways to create learning platforms for community and organizational advocacy. Develop skills in campaign development, content creation, and impact evaluation in a mobile media context.

Repeat for Credit

N

Requisites

Prerequisite: CC 410

Typically Offered

Fall, Spring

MC 573 - Ethics in Mass Communication

Credits 3

Making ethical decisions in mass media fields and the principles on which those decisions are based.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring

MC 576 - Mass Communications and Political Campaigns

Credits 3

The roles of journalism, advertising and public relations in political campaigns. Examines campaign communication strategies, staffing, and the role of political consultants. Analyzes how voter decision making is affected by mass communications and how voters develop attitudes about candidates and issues.

Repeat for Credit

N

Requisites

Prerequisite: Either MC 200, MC 211, MC 221, or MC

280.

Typically Offered

Other

Crosslisted

POLSC 576

K-State 8

Social Sciences

MC 580 - Storytelling Across Platforms

Credits 3

Reporting, writing, and production across multiple platforms. Critical analysis of media and engagement strategies for reporting in a digital world.

Repeat for Credit

N

Requisites

Prerequisite: MC 403, MC 406, MC 416 or MC 426 and senior standing.

Typically Offered

Fall, Spring

MC 581 - Campaigns in Advertising and Public Relations

Credits 3

Implements skills learned in coursework, internships, job experiences, and elsewhere to experience all aspects of strategic communications planning in an applied environment with a client. Capstone course for the Advertising and Public Relations degree.

Repeat for Credit

N

Requisites

MC 396 and MC 482 with a grade of C or better.

Typically Offered

Fall, Spring

MC 585 - Media Management

Credits 3

Issues, ethics and practices in managing media companies, with special emphasis on problems and practices in converged media operations.

Note

100% Lecture

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

MC 589 - Issues in Mass Communication

Credits 1-3

Advanced topics in mass communication practices and principles.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MC 605 - Supervision of School Publications

Credits 3

A methods course for those planning to teach secondary or community college journalism courses and advise high school or community college publications.

Repeat for Credit

N

Typically Offered

Summer

MC 612 - Diversity in Media

Credits 3

Explores diversity issues in the media, including the nature of mass media's portrayal of gender, race, ethnicity, sexuality, sexual orientation and class in entertainment, news, advertising, public relations, and other media.

Repeat for Credit

N

Typically Offered

Spring

MC 623 - Communicating in Global Markets**Credits 3**

Issues associated with advertising in a global environment, including cultural impact, international media, regulation, ethics and digital media technologies.

Repeat for Credit

N

Requisites

Prerequisite: MC 120 OR MC 180, with a grade of C or better.

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

MC 680 - Readings in Mass Communications**Credits 1-3**

Investigation of the literature of mass communications.

Note

Three significant books per credit hour with written analysis and oral presentation.

Repeat for Credit

Y

Requisites

Prerequisite: Senior or graduate standing and consent of supervisory instructor.

Typically Offered

Other

MC 682 - Seminar in Public Relations**Credits 3**

Contemporary topics in public relations practice, theory,

and research.

Repeat for Credit

Y

Requisites

Prerequisite: MC 280, MC 482, MC 502 with grades of C or better.

Typically Offered

Other

MC 683 - Reputation Management**Credits 3**

Managing the public perception of organizations from the standpoint of preparing for issues and unforeseen emergencies that can potentially disrupt the relationship between organizations and the publics they serve.

Repeat for Credit

N

Requisites

Recommended Prerequisites: MC 482.

Typically Offered

Fall, Spring, Summer

MC 690 - Problems in Mass Communications**Credits 1-4**

Problems in Mass Communications

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for problem undertaken.

Typically Offered

Other

MC 701 - Proseminar in Mass Communication**Credits 1**

Introduction to advanced study in mass communication with special emphasis on requirements for obtaining the

master of science degree.

Repeat for Credit

N

Typically Offered

Fall

MC 710 - History of Mass Communications

Credits 3

Growth and development of the news media and mass communication media and systems in the United States and their economic, political, and social significance.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing, or instructor permission with a 2.5 GPA and completion of a United States history course.

Typically Offered

Fall

MC 712 - Environmental Communications

Credits 3

Combines theoretical discussions with practical experience regarding communications about environmental issues and provides introduction to natural and applied science topics related to the communications plan.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Spring-Even Years

Crosslisted

AGCOM 712

MC 720 - Ethics in Mass Communications

Credits 3

Moral analysis, argument, and decision making by the mass communicator.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing, or instructor permission with a 2.5 GPA and completion of a philosophy course.

Typically Offered

Fall, Spring

MC 725 - International Communications

Credits 3

Comparative study of world media systems and the role of mass communications in national development.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing, or instructor permission with a 2.5 GPA.

Typically Offered

Fall

MC 730 - Seminar in Issues of the Media

Credits 3

A study of philosophical and technological advances in mass communications with emphasis on projected patterns of future growth and development.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing or instructor permission with a 2.5 GPA.

Typically Offered

Other

MC 740 - Colloquium in Mass Communications

Credits 1-3

Discussion of selected topics in mass communications research and practice.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing or instructor permission.

Typically Offered

Other

MC 745 - Seminar in Mass Communication Law**Credits 3**

Analysis of mass communication freedoms and limitations in such areas as defamation, privacy, copyright, censorship, obscenity, and advertising and electronic media regulation.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Spring

MC 750 - Strategic Health Communication**Credits 3**

The role of effective communication through mass media and other communication strategies in health promotion and behavior change. Includes the theories and strategies used to promote public health messages, services or products for multicultural audiences, with a focus on human, environment and animal health. Legal, ethical issues and gender issues in health communication will be given special attention.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing, or instructor permission with a 2.5 GPA.

Typically Offered

Spring

MC 760 - Issues, Risk, and Reputation**Credits 3**

Promotes understanding of strategic communication and media as tools to prepare for, respond to, and recover from threats to organizational and brand reputation.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing, or instructor permission.

Typically Offered

Fall

MC 765 - Communication Theory**Credits 3**

An examination of major communication theories as they relate to mass communications.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing, or instructor permission with 2.5 GPA.

Typically Offered

Fall

MC 770 - Mass Communication Practicum**Credits 1-4**

Supervised practical work in professional mass communications settings, including laboratory investigation, field work, internships, and applied workplace research.

Note

Instructor consent required.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

MC 780 - Research Methods in Mass Communications

Credits 3

Survey of research methods used in the study of the mass media.

Repeat for Credit
N

Requisites
Prerequisite: For graduate students.

Typically Offered
Other

MC 782 - Strategic Communications Management

Credits 3

Study of various forms of communication management and strategies that further the objectives of an organization, including organizational communication, marketing communication, and public relations.

Repeat for Credit
N

Typically Offered
Fall

MC 799 - Independent Study in Mass Communication

Credits 1-3

Supervised independent study in mass communication. Requires contractual agreement between student and professor, specifying content, meeting times, and credits to be awarded.

Repeat for Credit
N

Requisites
Prerequisite: Graduate standing, instructor consent.

Typically Offered
Fall, Spring, Summer

MC 801 - Advanced Research Methods: Qualitative

Credits 3

Introduction to qualitative methods, analysis, interpretation, and writing in media-related fields, and how qualitative inquiry contributes to theory construction in mass communication.

Repeat for Credit
N

Requisites
Prerequisite: Graduate Standing.

Typically Offered
Fall

MC 820 - Digital Media Audiences and Analytics

Credits 3

Theories and concepts related to digital audiences in mass communication, content strategies, and how media audiences are formed, analyzed, and measured in the digital age.

Repeat for Credit
N

Typically Offered
Spring

MC 830 - Media and Community Engagement

Credits 3

Explores the role of media in increasing civic engagement and public participation, enabling the exchange of useful information, and fostering social connectivity to strengthen citizen agency and the overall democratic process.

Repeat for Credit
N

Typically Offered
Spring

MC 840 - Social Media Data Visualization

Credits 3

Familiarizes students with social-scientific methods for large-scale social-media data analysis and visualization, including the application of relevant user and concept networks, content categorizations, and sentiment analysis. In addition, the use of germane software in emerging and digital media research is developed.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing or instructor permission.

Typically Offered

Fall

MC 850 - Applied Research in Mass Media

Credits 3

Study and application of mass media research, its literature, and methodology.

Repeat for Credit

Y

Requisites

Prerequisite: MC 780.

Typically Offered

Other

MC 899 - Research in Mass Communications

Credits 1-18

Research in Mass Communications

Note

Thesis/report credit.

Repeat for Credit

Y

Requisites

Prerequisite: Sufficient training to carry on the line of research undertaken.

Typically Offered

Other

ME 101 - Introduction to Mechanical Engineering

Credits 2

Introduction to the mechanical engineering curriculum and profession. Orientation for successful transition of new students to college life. Engineering approach to problem solving and computer use in all areas of mechanical engineering. Exchange of information regarding academic, technical, social, ethical, and professional matters between students, faculty, and practicing professionals.

Note

Must be taken during the student's first eligible fall or spring semester in mechanical engineering.

Two hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent enrollment: MATH 220.

Typically Offered

Fall, Spring

ME 212 - Engineering Graphics

Credits 2

Technical sketching, study of basic principles of projective geometry, multiview drawings, pictorials, reading and interpreting drawings, CAD, sectioning, dimensioning.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Pre/Corequisite: MATH 220 - Calculus I OR MATH 205 - General Calculus Recommended Prerequisite: Plane geometry.

Typically Offered

Fall, Spring

ME 310 - Elements of Thermodynamics

Credits 2

Properties of pure substances. The first law of thermodynamics for open and closed systems. A brief introduction to the second law of thermodynamics.

Note

For Civil and Environmental Engineering Majors

Repeat for Credit

N

Requisites

Prerequisite: PHYS 213, MATH 221

Typically Offered

Fall, Spring

ME 312 - Advanced Engineering Graphics

Credits 3

Advanced 3D CAD features and solid modeling techniques including an introduction to sheet metals, multi-body parts, weldments, etc. Advanced SolidWorks features such as creating configurations from other configurations, deformed features, surfacing and Macros will be introduced.

Repeat for Credit

N

Requisites

Prerequisite: ME 212

Typically Offered

Summer

ME 390 - Topics in Mechanical Engineering

Credits 1-18

Topics selected in consultation with instructor. Intended for interdisciplinary studies or innovative studies in mechanical engineering.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

ME 400 - Computer Applications in Mechanical Engineering

Credits 3

The development and application of computer techniques to the problems of design and analysis in mechanical engineering, including computer programming (abstraction and problem solving; algorithms; control structures; input/output; functions; arrays and array processing).

Note

Two hours lecture a week and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: MATH 340.

Typically Offered

Fall, Spring

ME 497 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ME 499 - Honors Research in Mechanical Engineering

Credits 1-18

Individual research problem selected with approval of faculty advisor. Open to students in the College of Engineering honors program. A report is presented orally and in writing during the last semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

ME 500 - Robotics Programming and Design**Credits 3**

Application of mechanical engineering design and embedded programming techniques to design, build, and control a robotic system. Focus on robotic kinematics, differential motion, and trajectory planning to support the programming and design of a 3-axis pick and place machine. Robotic theory will be implemented using C++ deployed on an embedded system with the goal of implementing a complete and functional pick and place system.

Repeat for Credit

N

Requisites

Prerequisite: (ME 400 or ECE 241)

Typically Offered

Fall

ME 512 - Dynamics**Credits 3**

Vector treatment of kinematics, Newton's Laws, work and energy, impulse and momentum, with applications to problems of particle and rigid body motion.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 333. Prerequisite or concurrent: MATH 340.

Typically Offered

Fall, Spring, Summer

ME 513 - Thermodynamics I**Credits 3**

Properties of the pure substance. The first and second laws

of thermodynamics. Gas mixtures and psychrometry.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 213; MATH 221.

Typically Offered

Fall, Spring, Summer

ME 519 - Electrical Circuits for Mechanical and Nuclear Engineering**Credits 3**

Analysis, design, construction, and application of electric and electronic circuits using analytic tools, fundamentals of common components, instrumentation, and computer-based tools.

Note

Three hour of lecture per week ending after week 10. Three hours of lab per week for the entire semester.

Repeat for Credit

N

Requisites

Prerequisites: PHYS 214, MATH 340, and MATH 551.

Typically Offered

Fall, Spring

ME 523 - Thermodynamics II**Credits 3**

Continuation of Thermodynamics I. Energy analysis, thermodynamic cycles, generalized thermodynamic relations, and reactive systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 513.

Typically Offered

Fall, Spring

ME 532 - Experimental Strength of Materials**Credits 3**

The experimental investigation of engineering materials used in the fabrication of products including metals, polymers, ceramics, composites, and elastomers. Provides basic knowledge in material science and inherit material properties such as elastic modulus, yield strength, toughness, etc., so students can solve real engineering problems and design engineering structures/systems.

Note

Two hours of lecture per week. One three hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: CHE 354, CHE 355, CE 533

Typically Offered

Spring

ME 533 - Machine Design I**Credits 3**

Introduction to the design and analysis of machine elements. Emphasis on materials, loads, stress, strain, deflection, failure theories, and finite element analysis. Applications include design and analysis of shafts, gears, and fasteners, weldments, springs, bearings.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 533, ME 212 and ME 512.

Typically Offered

Fall, Spring

ME 535 - Measurement and Instrumentation Laboratory**Credits 3**

Theory and application of mechanical engineering measurements, instrumentation, and computer-based data acquisition.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 513 and (ECE 519 or ME 519)

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

ME 543 - Intermediate Mechanics of Materials**Credits 3**

Fundamental principles of mechanics and its application to design and analysis of engineering structures. Topics covered include stress and strain, elastic and inelastic properties of materials, composite structures, unsymmetric bending, thin-walled structures and energy methods in structural analysis.

Repeat for Credit

N

Requisites

Prerequisite: CE 533

Typically Offered

Fall

ME 563 - Machine Design II**Credits 3**

Design and analysis of machine elements. Applications include design and analysis of bearings, gears, shafts, clutches, brakes, belt and chain drives, and hydraulic fluid power.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 533.

Typically Offered

Fall, Spring

ME 570 - Control of Mechanical Systems I**Credits 4**

Introduction to modeling and control of dynamic systems encountered by Mechanical Engineers. Topics include basic linear systems modeling and analysis; feedback control; time response and stability of dynamic systems; introduction to root locus and frequency response design.

Note

Three hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340, ME 400, and ME 512.

Prerequisite or concurrent enrollment: ME 535.

Typically Offered

Fall, Spring

ME 571 - Fluid Mechanics**Credits 3**

Physical properties; fluid statics; dynamics of ideal and real fluids (for incompressible and compressible flow); impulse and momentum; laws of similitude; dimensional analysis; flow in pipes; flow in open channels; flow about immersed objects.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 512 or CE 530, and MATH 222.

Prerequisite or concurrent: ME 513 or ME 310

Typically Offered

Fall, Spring, Summer

ME 573 - Heat Transfer**Credits 3**

Fundamentals of conduction, convection, and radiation; principles of heat exchanger design and dimensional analysis.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 400, ME 571, MATH 340.

Typically Offered

Fall, Spring

ME 574 - Interdisciplinary Industrial Design Projects I**Credits 3**

Introduction to design theory, project management, team dynamics and socio-economic context of design, etc.; Application of design principles, engineering analysis and experimental methods to an interdisciplinary design project involving design, analysis, fabrication and testing. Discussion of ethics, technical/professional societies, and engineering licensing.

Repeat for Credit

N

Requisites

Prerequisite: ME 535, ME 533, ME 571.

Prerequisite or concurrent enrollment: ENGL 200, or instructor approval.

Typically Offered

Fall, Spring

ME 575 - Mechanical Engineering Capstone Design**Credits 3**

In-depth application of design principles, engineering analyses and experimental methods to an industrial project addressing design, analysis, constraints, standards, fabrication, and testing.

Repeat for Credit

N

Requisites

Prerequisite: ME 574 or instructor permission.

Typically Offered

Fall, Spring

ME 610 - Finite Element Applications in Mechanical Engineering

Credits 3

The application of the finite element method to the solution of engineering problems. Topics include introductions to the methods, linear elastic stress analysis, thermal analysis, and modeling limitations and errors. Commercial computer codes are used in the applications.

Repeat for Credit

N

Requisites

Prerequisite: CE 533.

Typically Offered

Fall, Spring

ME 615 - Applications in Mechatronics

Credits 3

Application of Mechanical and Electronic engineering to design. Microcontrollers; sensors; analog-to-digital signal conversion; DC motor operation and pulse width modulation; drive train configuration; embedded C programming; competition at Engineering Open House.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 400 or ECE 431. Corequisite: ME 535 (not required if ECE 431 is taken).

Typically Offered

Spring

ME 620 - Internal Combustion Engines

Credits 3

Application of principles of thermodynamics, fluid mechanics, chemistry, kinematics, and heat transfer to internal combustion engine processes. Performance and design characteristics of internal combustion engines.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 523.

Typically Offered

Fall

ME 622 - Indoor Environmental Engineering

Credits 3

Ventilation, heating and cooling system design for buildings. Application of thermodynamic, heat transfer, and fluid mechanics principles for determination of building heating and cooling loads. Determination of ventilation requirements. Sizing, design and integration of environmental control systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 571.

Typically Offered

Spring

ME 626 - Introduction to Micro-Electromechanical Systems

Credits 3

MEMS (micro-electromechanical systems) adapt the fabrication techniques and materials of semiconductor IC (integrated circuits) chips to make mechanical components, like cantilever beams, hinges, micromotors, micromirrors and microfluidic chips. In this course, the fabrication, design, and application of MEMS will be covered. Students will gain the knowledge of MEMS that combines interdisciplinary subjects of mechanical, electrical, and chemical engineering and material sciences.

Note

A student may take either ME 626 or ME 826 for credit, but not both.

Repeat for Credit

N

Typically Offered

Fall

ME 627 - Introduction to Biomedical Micro-Electromechanical Systems

Credits 3

BioMEMS and microfluidics handle minute amount of liquids (microliter to picoliter) and bio-objects (DNA, protein, and cell). The course will cover (1) unique sciences of microfluidics, (2) liquid and bio-object manipulating principles, (3) design and manufacturing of microfluidic and biosensing devices, and (4) application in in vitro (out of body) diagnosis, 3D bioprinting, origami, and tissue engineering.

Note

A student may take either ME 627 or ME 827 for credit, but not both.

Repeat for Credit

N

Typically Offered

Spring

ME 628 - Aerodynamics

Credits 3

A general introduction to aerodynamics including the analysis of lift, drag, thrust, and performance for subsonic aircraft, and the application of aerodynamic principles to design.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 571, MATH 340.

Typically Offered

Fall

ME 631 - Aircraft Propulsion

Credits 3

Mechanics and thermodynamics of aircraft propulsion systems; gas turbine aircraft engines; applied compressible flow; performance and design of propulsion systems.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 523, 571, MATH 340.

Typically Offered

Spring

ME 633 - Thermodynamics of Modern Power Production

Credits 3

The first and second law analysis of modern stationary power systems using fossil, nuclear, and renewable energy sources. Component and system design, such as cycle design, load factor, and auxiliaries are considered in conjunction with their costs.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 523.

Typically Offered

Fall

ME 640 - Control of Mechanical Systems II**Credits 3**

Design and analysis of control systems. Topics include linear and nonlinear systems modeling; parameter estimation/system identification; steady state errors; advanced root locus and frequency response design; controller implementation.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 570 and MATH 551.

Typically Offered

Fall

ME 651 - Introduction to Composites**Credits 3**

Design, fabrication and testing of various composite materials. Analyses of mechanical properties of laminated composites.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CE 533 and senior standing in engineering.

Typically Offered

Fall

ME 656 - Mechanical Vibrations**Credits 3**

A general consideration for the formation and analysis of free and forced vibration of mechanical systems of single and multiple degrees of freedom.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 512 and MATH 340.

Typically Offered

Spring

ME 661 - Introduction to Nanoscience and Nanotechnology**Credits 3**

This interdisciplinary course will cover basic areas of nanotechnology, which includes synthesis of various nanomaterials (0D, 1D and 2D nanostructure), mechanical property assessment (hardness, modulus, yield strength measurements), energy generation (solar energy, thermoelectrics and energy generation from vibrations), 3-D printing of nanocomposites and energy storage.

Note

This course is designed for final year senior and/ or graduate students interested in the areas of experimental nanoscale science and engineering.

Repeat for Credit

N

Requisites

Prerequisite: CHE354, CHE355, ME 533, ME 573

Typically Offered

Spring

ME 699 - Problems in Mechanical Engineering**Credits 1-18**

Problems in Mechanical Engineering

Repeat for Credit

Y

Requisites

Prerequisite: Approval of department head.

Typically Offered
Fall, Spring, Summer

ME 701 - Development of Computer Applications In Mechanical Engineering

Credits 3

Nature of design, graphical user interface development to support computer-aided design, algorithms and computer graphics in computer applications, feature-based design, applications to design problems.

Repeat for Credit
N

Requisites
Prerequisite: ME 400.

Typically Offered
Fall

ME 710 - Intermediate Topics in Interdisciplinary Systems Analysis

Credits 1-3

Analyze complex, interdisciplinary systems using the systems thinking framework. Model the systems using narrative and visual tools for systems thinking. Systems analyzed include engineering systems and may include economic, and/or social elements.

Repeat for Credit
Y

Requisites
Co- Req: Senior or graduate standing

Typically Offered
On sufficient demand

ME 711 - Interdisciplinary Seminar

Credits 0-3

The interdisciplinary seminar creates an opportunity to learn from other interdisciplinary researchers, form interdisciplinary research teams, and engage in interdisciplinary discussions. Topics include interdisciplinary research and collaboration, and professional development.

Repeat for Credit
Y

Requisites
Co-Req: Senior or graduate standing, or instructor permission

Typically Offered
On sufficient demand

ME 716 - Intermediate Dynamics

Credits 3

General vector principles of the dynamics of particles and rigid bodies; applications to orbital calculations, gyro dynamics, and rocket performance; introduction to the energy methods of advanced dynamics.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: ME 512, MATH 340.

Typically Offered
Spring

ME 720 - Intermediate Fluid Mechanics

Credits 3

A continuation of ME 571 in the study of general topics in fluid mechanics. Conservation of mass and momentum principles with particular emphasis on analysis of inviscid (potential) flows, compressible flows, and more advanced viscous flows including boundary layers. Numerous applications utilizing numerical methods.

Repeat for Credit
N

Requisites
Prerequisite: ME 571, MATH 340.

Typically Offered
Fall

ME 721 - Thermal Systems Design

Credits 3

Thermal systems design including economics, simulation, and optimization. Includes heating, ventilating and air conditioning design and control.

Repeat for Credit

N

Requisites

Prerequisite: ME 573.

Typically Offered

Fall

ME 722 - Human Thermal Engineering**Credits 3**

Application of thermodynamic, heat transfer, and fluid mechanics principles of the thermal analysis of the human body. Mathematical analysis and computer modeling of human response to the thermal environment. Evaluation of heat stress and cold stress. Protection from heat and cold. Requirements for thermal comfort and impact on human performance.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 573.

Typically Offered

Fall-Odd Years

ME 728 - Computer Control of Electro Mechanical Systems**Credits 3**

Discrete modeling and analysis of dynamic physical systems in Mechanical Engineering. Sampling and data conversion and reconstruction. Real time implementation of control on a computer. Digital controller design and implementation. Laboratory exercises in control applications and design.

Note

Two hours of recitation and three hours of laboratory per

week.

Repeat for Credit

N

Requisites

Prerequisite: ME 570.

Typically Offered

Spring

ME 730 - Control Systems Analysis and Design**Credits 3**

Use of classical analysis techniques for control system compensation. State space-control theory fundamentals are presented in addition to an introductory treatment of several major systems areas.

Repeat for Credit

N

Requisites

Prerequisite: ECE 530 or ME 640.

Typically Offered

Spring

Crosslisted

ECE 730

ME 738 - Experimental Stress Analysis**Credits 3**

Experimental methods of investigating stress distributions. Photoelastic models, photoelastic coatings, brittle coatings, and resistance strain gauges applied to static and dynamic problems.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: CE 533.

Typically Offered

Fall-Even Years

ME 760 - Engineering Analysis I

Credits 3

Methods of analysis and solution of problems selected from various branches of engineering. Topics typically include vector algebra, vector spaces, linear algebra and matrices, vector calculus, line, surface and volume integrals, and ordinary differential equations for engineering applications.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and senior standing.

Typically Offered

Fall

ME 773 - Intermediate Heat Transfer

Credits 3

Conduction, convection and radiation, mass transfer, phase change, heat exchangers, introductory numerical methods.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: ME 573.

Typically Offered

Spring

ME 777 - Monte Carlo Methods

Credits 3

The objective of this course is to explore various methods of Monte Carlo for solving direct and inverse problems in engineering. The course covers probability distributions; laws of large numbers and Central Limit Theorem; pseudorandom number generation; sampling, scoring, and precision; variance reduction procedures; Markov chain Monte Carlo; inverse Monte Carlo; solution of linear operator equations; particle transport simulation.

Repeat for Credit

N

Requisites

Prerequisite: Math 340 or equivalent and knowledge of a programming language.

Typically Offered

Spring-Even Years

ME 800 - MNE Graduate Seminar/Research Paper

Credits 0-18

Presentation(oral and written) and discussion of progress in research. Credit hours can be earned by preparing and/or presenting publication quality papers. Topics may be drawn from any current research area in mechanical and nuclear engineering.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing in mechanical and nuclear engineering.

Typically Offered

Fall, Spring

ME 802 - Advanced Mechanics of Materials and Applied Elasticity

Credits 3

Two- and three-dimensional deformation analysis, equilibrium, and elastic constitutive laws. Stress-strain transformations between coordinate systems. Governing equations of elasticity. Advanced topics in bending, shearing, torsion and combined loads, with applications to engineering problems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: CE 533.

Typically Offered

Fall-Even Years

Crosslisted

CE 802

ME 811 - Thermodynamic Analysis**Credits 3**

Basic considerations of the three laws of equilibrium thermodynamics. Availability analysis with applications including multicomponent systems.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 523, ME 571, MATH 240.

Typically Offered

Spring-Even Years

ME 820 - Intermediate Topics in Thermal and Fluid Mechanics**Credits 0-18**

Topics may include combustion, direct energy conversion, modeling and design of internal combustion engines, nonequilibrium multiphase and multicomponent systems, refrigeration, cryogenics, stability and turbulence.

Repeat for Credit

Y

Requisites

Prerequisite: ME 720 or ME 773.

Typically Offered

On sufficient demand

ME 824 - Computational Fluid Dynamics**Credits 3**

The course introduces basic theories and algorithms for numerical simulations, and uses them to solve both model problems and classical fluid mechanics problems computationally.

Repeat for Credit

N

Requisites

Prerequisite: ME 720

Typically Offered

Spring

ME 826 - Intermediate Micro-Electromechanical Systems**Credits 3**

MEMS (micro-electromechanical systems) adapt the fabrication techniques and materials of semiconductor IC (integrated circuits) chips to make mechanical components, like cantilever beams, hinges, micromotors, micromirrors and microfluidic chips. In this course, the fabrication, design, and application of MEMS will be covered. Students will gain the knowledge of MEMS that combines interdisciplinary subjects of mechanical, electrical, and chemical engineering and material sciences. Advanced applications of MEMS are covered.

Note

A student may take either ME 626 or ME 826 for credit, but not both.

Repeat for Credit

N

Typically Offered

Fall

ME 827 - Intermediate Biomedical Micro-Electromechanical Systems**Credits 3**

BioMEMS and microfluidics handle minute amount of liquids (microliter to picoliter) and bio-objects (DNA, protein, and cell). The course will cover (1) unique sciences of microfluidics, (2) liquid and bio-object manipulating principles, (3) design and manufacturing of microfluidic and biosensing devices, and (4) application in in vitro (out of body) diagnosis, 3D bioprinting, origami, and tissue engineering. Advanced applications of BioMEMS are covered.

Note

A student may take either ME 627 or ME 827 for credit,

but not both.

Repeat for Credit

N

Typically Offered

Spring

ME 830 - Intermediate Topics in Automatic Controls

Credits 1-18

Topics may include analysis and design of nonlinear, adaptive, optimal, digitals or stochastic control systems and the applications of intermediate control and stability theory.

Repeat for Credit

Y

Requisites

Prerequisite: ME 730 or ECE 730 or consent of instructor.

Typically Offered

On sufficient demand

ME 831 - Boundary Layer Theory

Credits 3

The development and solution of various laminar boundary layer problems involving momentum, heat, and mass transfer for a compressible viscous fluid.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 573.

Typically Offered

Fall-Even Years

ME 836 - Introduction to Fracture Mechanics

Credits 3

This course provides an introduction to fracture mechanics concepts and applications. Topics include the asymptotic solution for stress at a crack tip, energy balance and crack

propagation, computing stress intensity factors, fatigue crack growth, fracture of concrete, applications and current topics.

Repeat for Credit

Y

Requisites

Prerequisite: ME 802 or CE 802.

Typically Offered

Fall-Odd Years

ME 840 - Intermediate Topics in Solid Mechanics and Machine Design

Credits 1-18

Topics may include intermediate elasticity, plasticity, tribology, probabilistic machine design, robotics, computational dynamics and nonlinear mechanics.

Repeat for Credit

Y

Requisites

Prerequisite: ME 716 or ME 802 or CE 802.

Typically Offered

On sufficient demand

ME 846 - Vibrations of Continuous Media

Credits 3

Basic mathematical and physical descriptions for wave phenomena in continuous media, with emphasis on propagations of mechanical disturbance in linearly elastic solids. Other selected topics in wave dynamics, including acoustics, water waves, nonlinear phenomena, will be discussed depending on students' interest.

Note

Three hours of recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 802 or CE 802.

Typically Offered

Fall-Odd Years

ME 860 - Engineering Analysis II

Credits 3

Continuation of Engineering Analysis I to cover more methods of analysis and solution important for engineering applications. Topics typically include complex variable theory, differential operators and orthogonal functions, Sturm-Liouville theory, Fourier series and Fourier transforms, and partial differential equations for engineering applications.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 760 or consent of instructor.

Typically Offered

Spring

ME 862 - Finite Elements

Credits 3

The foundations of the finite element method using weighted residuals and variational methods. Element formulation, assembly and solution are covered in detail. Formulation for dynamic and nonlinear problems. Discussion of advanced topics. The student will develop a complete finite element program.

Repeat for Credit

Y

Requisites

Prerequisite: ME 760. Prerequisite or concurrent enrollment: ME 802 or CE 802.

Typically Offered

Spring

ME 871 - Mechanics of Composite Materials

Credits 3

Topics include classification of composite materials, elasticity theory for anisotropic and in homogeneous materials, basic model for characterization of composite properties, laminated plate theory, textile composites,

strength and criteria for composite failure, and fracture modes in composites.

Repeat for Credit

Y

Requisites

Prerequisite: ME 802 or CE 802.

Typically Offered

Spring-Odd Years

ME 898 - Master's Report

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ME 899 - Master's Thesis

Credits 1-18

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

ME 902 - Theory of Plasticity

Credits 3

Foundations of plasticity. Vectorial and sensorial analysis. Coverage of pressure-dependent and pressure-independent materials. Hyper elasticity-Green elasticity. Deformation theory of plasticity. Flow theory of plasticity. Plastic work rate-equivalent strain. Classical yield criteria. Closed form solution of simple cases. Numerical solutions of more complex cases.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 802 or CE 802.

Typically Offered

Spring-Even Years

ME 910 - Computational Methods in Design**Credits** 0-18

Selected topics from optimal design, geometric modeling, and multi-physics finite element methods.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

ME 920 - Advanced Topics in Thermal and Fluid Mechanics - Boltzmann Transport**Credits** 3

Non-Fourier heat transfer models used for microscale transport phenomena. Boltzmann integral methods for determining ion/neutron effects on metal material temperature.

Repeat for Credit

Y

Requisites

Prerequisite: ME 720 or ME 773.

Typically Offered

On sufficient demand

ME 921 - Thermal System Analysis**Credits** 3

Advanced study of steady-state and dynamic simulation of thermal systems; thermal systems optimization. Thermodynamic availability and probabilistics in thermal system design.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 721.

Typically Offered

Spring-Odd Years

ME 930 - Advanced Topics in Automatic Controls**Credits** 1-18

Topics may include analysis and design of nonlinear, adaptive, optimal, digital, or stochastic control systems and the application of advanced control and stability theory.

Repeat for Credit

Y

Requisites

Prerequisite: ME 640.

Typically Offered

Fall, Spring

ME 935 - Heat Conduction in Solids**Credits** 3

General differential equation of heat conduction and methods of solution for steady-state and transient heat conduction, periodic heat flow, and internal heat sources.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 573.

Typically Offered

Fall-Odd Years

ME 940 - Advanced Topics in Solid Mechanics and Machine Design**Credits** 1-18

Topics may include advanced elasticity, plasticity, tribology, probabilistic machine design, robotics, advanced and computational dynamics and nonlinear mechanics.

Repeat for Credit

Y

Requisites

Prerequisite: ME 802 or CE 802 or ME 716 or ME 846.

Typically Offered

On sufficient demand

ME 942 - Convection Heat Transfer

Credits 3

Energy and momentum equations in convective heat transfer, laminar and turbulent thermal boundary layers, steady and nonsteady convection problems.

Note

Three hours recitation a week.

Requisites

Prerequisite: ME 573.

Typically Offered

Spring-Odd Years

ME 943 - Radiation Heat Transfer

Credits 3

Basic theories of thermal radiation, shape factors; exact and approximate solutions of integral equations of radiation heat transfer between solid surfaces with absorbing or nonabsorbing medium.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 573.

Typically Offered

Fall-Even Years

ME 947 - Boiling Heat Transfer

Credits 3

Principles of boiling heat transfer and thermal hydraulics of two-phase flow; computational methods; design and analysis applications.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: ME 942

Typically Offered

Fall-Odd Years

ME 999 - Dissertation Research in Mechanical Engineering PhD Level

Credits 1-18

Dissertation Research in Mechanical Engineering PhD Level

Repeat for Credit

Y

Requisites

Prerequisite: Approval of department head and major professor.

Typically Offered

Fall, Spring, Summer

MET 111 - Technical Graphics

Credits 3

Introduction to applications in sketching and 2D computer-aided design applied to geometric development and engineering communication. Techniques are applied to produce finished drawings and schematics to National and international standards. Theory and applications of orthographic and auxiliary projection and pictorial drawing. Standards for symbols, section views, and dimensioning included.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MET 117 - Mechanical Modeling and Detailing

Credits 3

Professional practices in the development and application of 3D part and assembly modeling for design and manufacturing. Preparation of 3D model for manufacturing data or production drawing. Development of tolerances versus cost, fit tolerances, and introductory geometric dimensioning and tolerancing (GD&T) specifications. Application of handbook data and spreadsheet computation to design detail development.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MET 121 - Manufacturing Methods

Credits 3

Introduction to contemporary manufacturing processes and practices, including precision measurement and inspection, machining, forming, casting, and welding processes. Recitation and laboratory experience in manufacturing practices, including metrology and basic setup and operation of manufacturing equipment. Observation of applications in local industry.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MET 125 - Computer-Numerical-Controlled Machine Processes

Credits 2

Study and practice of basic CNC programming and machining operations.

Note

Six hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MET 211 - Statics

Credits 3

A study of forces and their effects on the bodies upon which they act.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Corequisite: PHYS 113.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 230 - Automated Manufacturing Systems I

Credits 3

A general survey of the various components and systems in automated manufacturing, including material handling, electropneumatic control, programmable logic control, robotics, tooling, inspection and quality control, CNC, and other production processes.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MET 231 - Physical Materials and Metallurgy**Credits 3**

A broad view of materials used in industry, including structures of materials, how they react to stress and temperature, how the polyphase structures form, and how they are controlled to produce optimum properties. Students will examine through study and laboratory experimentation ferrous and nonferrous metals, polymers, composites, and ceramics.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MET 240 - Industrial Robotics Laboratory**Credits 2**

An introduction to industrial robots emphasizing robot operation, programming, and integration with

programmable logic controllers and other automation equipment.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 335 or MET 230.

Typically Offered

Fall

MET 245 - Material Strength and Testing**Credits 3**

Calculations of material strength and deformation are complemented with principles and practice of mechanical testing including instrumentation and measurement in the areas of loads, stresses, deformations, thermal stresses, and other quantities.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 211.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

MET 252 - Fluid Power Technology**Credits 3**

Study, design, analysis, operation, maintenance, and applications of hydraulic and pneumatic power systems and components.

Note

Two hours lecture and two hours labs a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 150.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 264 - Machine Design Technology I**Credits 4**

Introduction to application and selection of machine elements to design mechanical systems. Covers primary machine elements such as shafts and shaft components, screws and fasteners, welded joints, springs, bearings, gears, clutches and brakes.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: MET 245.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Historical Perspectives

MET 299 - Topics in Mechanical Engineering Technology**Credits 1-18**

Provides an opportunity for faculty to present mechanical engineering technology topics.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MET 314 - Finite Element Analysis and Design Modeling**Credits 3**

Introduction to finite element analysis applied to mechanical design. Study and application of advanced computer-aided modeling techniques.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 117 and MET 245.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MET 325 - Additive Manufacturing**Credits 3**

The course develops an understanding of additive manufacturing (AM) principles and applications combined with a problem-based learning project which develops design, manufacturing and maintenance skill sets for AM practitioners.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MET 333 - Advanced Material Science

Credits 3

A continuation of MET 231 Physical Materials and Metallurgy. Emphasizes the understanding of material properties used to give various materials their function. Theory and laboratory work focus on controlling and testing material properties. Ferrous and non-ferrous metals, polymers and adhesives, composites, smart materials, effects of corrosion, failure analysis, and selection techniques for design.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: CHM 110 and CHM 111 and MET 231.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 336 - Dynamics of Machines

Credits 3

Velocities, accelerations, and forces in existing mechanisms to produce motions. Work, energy, impulse and momentum concepts in kinetics. Vibrations in machine parts.

Note

Three hour lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220 and PHYS 113.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 346 - Elements of Mechanisms

Credits 3

Fundamental motion concepts of displacement, velocity, and acceleration are studied, as well as analytical and graphical analysis and synthesis of linkages, gear trains, cams, pulleys, and combinations of these elements.

Repeat for Credit

N

Requisites

Prerequisite: MET 117 and MET 246.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 353 - Fluid Mechanics

Credits 3

Fundamental concepts of fluid mechanics. Study of buoyancy, energy equation, viscosity, and flow measurement. Selected applications of fluid mechanics in civil and mechanical technologies. Computer-aided solution of problems in fluid mechanics.

Note

Two hours lecture and two hours labs a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220, MET 252, and PHYS 113.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 365 - Machine Design Technology II

Credits 3

Continued study of design of mechanical elements and systems including engineering mechanics and materials, investigation of failure theories under static and variable loading, stress analysis, stress concentration, and deflections.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 264.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MET 381 - Quality Control

Credits 3

An introductory course in quality concepts and techniques used in industry. Topics include fundamentals of statistics and probability, statistical process control charts, and quality improvement tools.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing or consent of instructor.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MET 382 - Industrial Instrumentation and Controls

Credits 3

An introduction to process control systems for industrial applications. Course topics include concepts and terminology, first- and second-order systems, measurement of motion, gauges and transducers, signal processing, and measurement of properties.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 304 or ECET 201.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 410 - Managerial and Project Economics

Credits 3

Economic analysis of problems as applied to managerial decision making. Students consider the economic viability of solutions in engineering and a variety of other kinds of projects common in technology-oriented businesses.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100.

Typically Offered

Fall

Crosslisted

BUS 410

K-State 8

Social Sciences

MET 460 - Tool Design for Manufacturing

Credits 3

Principles and practices involved in tool drawing and design concepts necessary for the manufacture of products. Emphasis on design of jigs and fixtures, gauging devices, dies, ease of operation, and methods of assembly. Production cost related to selection of parts and methods of production is stressed. Applied laboratory exercises illustrated through specific case studies.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 117 and MET 125, and MET 346.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 462 - Senior Design Project I

Credits 1

Selection, definition, and analysis of a project supervised by faculty. Includes consideration of project parameters, trade-off studies, alternative solutions, and justification of selected solution. Completion and presentation of a written project proposal included.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Corequisite: MET 365

Typically Offered

Fall

MET 464 - Senior Design Project II

Credits 2

Development and implementation of project proposal

submitted in MET 462. Construction, packaging, and testing of project culminating in a senior design project report which may include full documentation and performance specifications, functional description, theoretical analysis, schematics, cost analysis, parts list, drawings, etc. Project results will be presented orally to a select committee at the end of the course.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 462 and senior standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

MET 471 - Thermodynamics and Heat Transfer

Credits 4

This course emphasizes thermodynamic laws and equations and the use of tables and charts for properties of important fluids. Applications to systems used for producing, transforming, and applying heat and mechanical energy are also studied. Conduction, convection, and radiation heat transfer processes are investigated.

Note

Three hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 220, MET 252, and PHYS 113.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

MET 481 - Automated Manufacturing Systems II

Credits 3

Covers systems for manufacturing operations including facilities, supplies, materials, procedures, and control. Topics include design, programming, feedback for manufacturing, production set-up, automated work cells, and decision issues.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 230 or MET 382.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Global Issues and Perspectives

MET 490 - Industrial Work Internship

Credits 1-18

The student will work as an intern with business and industry in mechanical engineering technology field. A report detailing duties performed and tasks accomplished is required at the end of the internship period.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing and consent of MET program coordinator.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MET 499 - Advanced Topics in Mechanical Engineering Technology

Credits 1-18

Provides an opportunity for faculty to present advanced mechanical engineering technology topics.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

MIS 366 - Introduction to Business Analytics and Information Systems

Credits 3

A comprehensive view of organizational information systems required for obtaining and transforming data into business analytics and intelligence. Cases and hands-on exercises emphasize information systems usage in data acquisition, analysis, and presentation leading to effective organizational decision-making.

Note

Special section of MANGT 366 open to students considering a Management Information Systems (MIS) Major.

Demonstrate competence in use of computer spreadsheets.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MIS 411 - Business Programming Applications

Credits 3

Business-related object-oriented programming fundamentals used to enhance skills for problem solving and logical thinking. Focuses on class diagrams, and the

utilization of programming languages for understanding and applying software development concepts.

Note

Prerequisite or consent of department head.

Repeat for Credit

N

Requisites

Prerequisite or concurrent: MANGT 366 or MIS 366

Typically Offered

Fall

MIS 422 - Business Database and SQL

Credits 3

Examination of database theory, design, implementation and the value of data to an organization. Study of structured query languages (SQL) including the definition and creation of database objects, manipulation of data stores including entry, modification, removal and extraction, and database programming fundamentals relevant to business and data analytics.

Note

Prerequisite or consent of department head.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MIS 433 - ERP Project Planning and Implementation

Credits 3

Applications of enterprise systems with emphasis on ERP systems configuration, business process integration and hands-on project management.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366.

Typically Offered

Spring

MIS 444 - Business Networks and Security

Credits 3

Study of digital networks and security considering impact and value to business organizations. Coverage includes communications protocols and standards, hardware, software, network implementation and configuration; and security. Emphasis on hands-on network setup, configuration and testing.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MIS 490 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MIS 495 - MIS Internship

Credits 0-3

Eight weeks of applied Management Information Systems (MIS) experience designed to coordinate the interests of students and firms.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MIS 496 - Special Topics in MIS and Data Analytics**Credits 1-6**

Discussion and analysis of current and emerging issues in management information systems or data analytics, including topics related to new theory, new applications, and technology or data analytics practice.

Note

Permission of instructor

Repeat for Credit

Y

Typically Offered

On sufficient demand

MIS 555 - Cloud Computing with Business Programming Applications**Credits 3**

Advanced application of business-related programming fundamentals in cloud environments. Focuses on utilization of programming languages and mobile software development for creating solutions to data-intensive business problems in cloud environments.

Repeat for Credit

N

Requisites

Prerequisite: MIS 411 and either MIS 422 or MIS 667.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MIS 566 - Systems Analysis and Design**Credits 3**

An in-depth study of systems analysis and design techniques viewing information systems as an integral component of organizational strategic planning. Emphasis on systems planning, project management, use of CASE tools, process and data modeling, quality and systems reengineering.

Repeat for Credit

N

Requisites

Prerequisite: MIS 411 and either MIS 422 or MIS 667.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

MIS 665 - Business Analytics and Data Mining**Credits 3**

In-depth study of a broad range of topics and techniques in business intelligence (BI), data mining, and database marketing (DM). Emphasis on fundamentals of relational database management, data warehousing as a business practice, customer relationship management (CRM), customer segmentation, various data mining techniques, data visualization, business performance management, use of scorecard/dashboard, and advanced BI and data mining software tools.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366 or an equivalent introductory computing course.

Typically Offered

Fall, Spring

MIS 667 - Applications of Data Models in Business**Credits 3**

Implementation and management of extract, transform, load (ETL) processing and automation from a business perspective. Topics include design of data migration approaches, data cleaning techniques, and technologies used to move and distribute data between various database types including relational, non-relational, on-site and cloud. SQL, NoSQL and other technologies provide context and hands-on practice in data pipelines implementation and management.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366, an equivalent introductory computing course, or permission of instructor.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MIS 670 - Social Media Analytics and Web Mining

Credits 3

This course is an in-depth study of a broad range of topics and techniques in the areas of social media analytics, web mining and social network analysis. Emphasis is on fundamentals of data acquisition from the web and social media platforms, transformation of these unstructured data into structured format, advanced data processing techniques for analysis, business intelligence through web crawling, analysis of web and social media data using classification, clustering, and association techniques, sentiment analysis (or opinion mining) for business decisions, visualization of unstructured data, and social network analysis.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366 or an equivalent introductory computing course.

Typically Offered

Spring, Summer

MIS 677 - Senior MIS Project

Credits 3

Senior project. Students must demonstrate proficiency in the analysis, design and implementation of a business or data analytics project by creating a working prototype of a business application.

Note

Management Information Systems (MIS) Majors Only or consent of department head.

Repeat for Credit

N

Requisites

Prerequisite: MIS 555 and MIS 566.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MIS 756 - Business Data Pipelines

Credits 3

Implementation and management of extract, transform, load (ETL) processing and automation from a business perspective. Topics include design of data migration approaches, data cleaning techniques, and technologies used to move and distribute data between various database types including relational, non-relational, on-site and cloud. SQL, NoSQL and other technologies provide context and hands-on practice in data pipelines implementation and management.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 366 or MIS 366, an equivalent introductory computing course, or permission of instructor.

Typically Offered

On sufficient demand

K-State 8

Empirical and Quantitative Reasoning

MIS 797 - Topics: Information Technology and Data Analytics

Credits 1-3

Discussion and analysis of contemporary issues in information technology, business analytics, trends, and emerging technology. Can include applications, relevant literature and research.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

**MIS 830 - Business Intelligence and
Storytelling in Cloud Environments****Credits 3**

A practical exposure to information technology as it applies to business. Emphasis will be placed on problem-solving using spreadsheets, databases, and HTML based information systems.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate student standing.

Typically Offered

Fall

MKTG 250 - Introduction to Marketing**Credits 3**

A general study of marketing principles which lead to the development of marketing strategy. A review of environmental influences and key analytical tools used in formulating marketing plans. Product or service design, distribution, pricing, and promotional programs.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

MKTG 300 - Introduction to Digital Marketing**Credits 3**

Designed to teach students the basic fundamentals of digital marketing. Topics include digital marketing terminology, search engine marketing, search engine optimization, mobile digital marketing, social media marketing, technology integration, and marketing analytics.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250

Typically Offered

Fall, Spring, Summer

MKTG 302 - Brand Marketing**Credits 3**

Focuses on building and measuring brands as business strategy, as well as personal branding.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Social Sciences

MKTG 305 - Socially Responsible Marketing**Credits 3**

Ethical marketing practices in the U.S. and global economy. There is a brief introduction to business ethics, ethics within the marketing mix, ethics and the promotional mix and special topics in marketing ethics. It will include case studies to help build experience with real world domestic and global situations and increase critical thinking and problem-solving skills.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250

Typically Offered

Fall or Spring

MKTG 306 - Business to Business Marketing

Credits 3

A study of the nature of the industrial marketplace, concentrating on those aspects that differentiate it from the consumer markets. The major topics include analysis of market needs, market segments, estimating market demand, organizational buying behavior, marketing channels, marketing strategy and mix for institutional customers, global marketing strategies, managing products and new product development, buyer/seller relationships, pricing strategies, and business marketing communications.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250.

Typically Offered

On sufficient demand

K-State 8

Social Sciences

MKTG 311 - Services Marketing

Credits 3

An analysis of the unique marketing challenges faced by service organizations. Major topics include the unique characteristics of services, creating and positioning a service in the marketplace, distributing, promoting and pricing services. An evaluation of marketing strategies from the perspective of a service firm.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250.

Typically Offered

On sufficient demand

K-State 8

Social Sciences

MKTG 325 - International Marketing

Credits 3

This course deals with the problems and perspectives of marketing across national boundaries. It also focuses on the tools and practices for structuring and controlling marketing programs related to overseas business. Emphasis is on the management of marketing functions in a global context. Topics include international trade organizations, international economic factors, foreign business customs, and the international marketing mix.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

MKTG 326 - International Business

Credits 3

This course provides students with an appreciation of the opportunities and unique challenges in international business, an understanding of the strategic and operational options available to an international firm, and managerial decision making abilities required to be successful abroad. The course examines strategic and operational issues involved in international business activity and how to best manage these issues.

Repeat for Credit

N

Requisites

Prerequisite: MANGT 220, MKTG 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

MKTG 440 - Entertainment Marketing

Credits 3

Examines the entertainment industry using strategic marketing approaches to assess market opportunities, develop marketing strategies, and design implementation tactics.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250.

Typically Offered

Spring

K-State 8

Social Sciences

MKTG 450 - Consumer Behavior**Credits 3**

A study of the concepts, principles, and theories to understand, evaluate and predict consumer behavior. Explaining the behavior of consumers provides insight into ambiguous marketing situations. The course focuses on applying scientific methods to aid in marketing decision making. In addition, this course integrates current consumer research and theory, as well as current topics.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250.

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

MKTG 480 - Marketing Analytics Fundamentals**Credits 3**

Students will develop an understanding of data collection, data analysis and data visualization in order to make strategic business decisions.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, STAT 250 or equivalent.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MKTG 490 - Undergraduate Research Experience**Credits 0-3**

Open to students pursuing undergraduate research projects.

Repeat for Credit

Y

Requisites

Prerequisite: MKTG 250, Consent of instructor.

Typically Offered

On sufficient demand

MKTG 495 - Marketing Internship**Credits 0-3**

Eight weeks of applied marketing business experience between junior and senior years designed to coordinate the interests of students and firms.

Repeat for Credit

Y

Requisites

Prerequisite: FINAN 450, MANGT 220, MKTG 250, and consent of Marketing department head.

Typically Offered

Fall, Spring, Summer

MKTG 496 - Special Topics in Marketing**Credits 3**

Discussion and analysis of current and emerging issues in marketing, including topics related to new theory, new

applications, and the practice of marketing.

Repeat for Credit

Y

Typically Offered

Fall or Spring

MKTG 498 - Independent Study in Marketing

Credits 0-18

Selected topics in marketing.

Repeat for Credit

Y

Requisites

Prerequisite: MKTG 250, Consent of instructor.

Typically Offered

On sufficient demand

MKTG 510 - Corporate Marketing Practicum

Credits 3

For high GPA marketing students to gain additional marketing insight by working with a company in applying marketing concepts.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, MKTG 300, consent of instructor

Typically Offered

Fall or Spring

MKTG 540 - Digital Content Strategy and Development

Credits 3

Development of strategic communications plans for digital marketing, including content structure and development. Students will have the opportunity to incorporate industry certifications as the course will instruct students on the skills needed for the certification exams.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, MKTG 300

Typically Offered

Fall, Spring

K-State 8

Social Sciences

MKTG 551 - Data Narratives and Visualization

Credits 3

Students learn to interpret complex datasets and effectively communicate the analysis through visualization and storytelling. They learn these techniques with and without the use of dashboards and/or presentation software.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, MKTG 300

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

MKTG 630 - Sports Marketing

Credits 3

Covers the concepts, metrics, and techniques used to address the opportunities and challenges faced by marketers in the context of sports.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

MKTG 650 - Digital Marketing Analysis and Strategy

Credits 3

Examines aspects of tracking, analyzing, and optimizing marketing efforts to achieve strategic objectives. It provides learners with an understanding of search engine marketing (SEM) and search engine optimization (SEO), web analysis and tools, and social media platforms and analytics. Learners have an opportunity to earn industry certifications.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, MKTG 300.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

MKTG 653 - Applications of Marketing Analytics**Credits 3**

Marketing analytics focuses on applications of quantitative analysis to understand dynamic marketing phenomena. This course is a mixture of lectures on essential marketing concepts/econometrics/text mining, instructions on software program (Stata and R), and discussions of marketing cases to facilitate students' critical thinking and decision making leveraged by analytical ability. To facilitate learning statistical software programs, students will practice hands-on projects in the computer lab.

Learning outcomes are that students will be able to do the following:

- Choose correct quantitative analysis methodologies
- Learn data analysis software programs (Stata and R)
- Make strategic decisions based on data analysis and communicate marketing strategies

Repeat for Credit

Y

Requisites

Prerequisite: MKTG 250, STAT 250 or equivalent.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

MKTG 654 - Marketing Research**Credits 3**

Learn the essential techniques and tools for data collection, analysis, and interpretation, including survey and experimental design (A/B testing). Students will explore qualitative and quantitative methods, learn to utilize statistical software, and engage in hands-on projects to apply concepts in marketing contexts to make strategic data-driven decisions.

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, STAT 351.

Typically Offered

Fall or Spring

K-State 8

Empirical and Quantitative Reasoning

MKTG 690 - Marketing Strategy**Credits 3**

Analysis of marketing situations which lead to appropriate management of the marketing program's objectives. Capstone course integrates knowledge of marketing and other business management principles into marketing strategy, development, implementation, and control.

Note

Undergraduates must be business students admitted in a College Business Administration degree track (major).

Repeat for Credit

N

Requisites

Prerequisite: MKTG 250, MKTG 300, SALES 300 and senior standing.

Typically Offered
Fall, Spring, Summer

K-State 8
Social Sciences

MKTG 705 - Marketing Concepts and Research

Credits 3

Presents marketing concepts and marketing research concepts at the graduate level. Emphasis is directed toward managerial strategy development using marketing theories and applied marketing research techniques.

Repeat for Credit
Y

Requisites
Prerequisite: Three hours of economics, three hours of statistics, and MATH 205 or MATH 220.

Typically Offered
Fall

MKTG 842 - Advanced Marketing Research

Credits 3

Application of advanced research methods to help solve marketing problems. Intensive examination of experimental and survey designs, data collection methods, and selected multivariate analysis techniques are covered.

Repeat for Credit
Y

Requisites
Prerequisite: STAT 351, MKTG 640, and MKTG 654.

Typically Offered
On sufficient demand

MKTG 844 - Advanced International Marketing

Credits 3

This course is designed to develop the students' managerial decision making ability in international marketing. The

course will focus on the internationalization process of firms, the unique issues in international marketing, and international marketing strategy. The course will integrate short lectures, class discussions, and case analysis to achieve its objectives.

Repeat for Credit
Y

Requisites
Prerequisite: MKTG 710.

Typically Offered
On sufficient demand

MKTG 860 - Advanced International Business

Credits 3

This course is designed to introduce the student to the nature and scope of fundamental business skills requisite for a career in international business. A unified survey of the international aspects of accounting, finance, management, marketing and related subjects will be made that is useful to a manager in a global business enterprise. Emphasis will be placed on the identification, articulation and implementation of successful global strategies.

Repeat for Credit
N

Requisites
Prerequisite: ACCTG 710, ECON 815, FINAN 715, MANGT 720, MANGT 710, MIS 830, MKTG 705, and STAT 702 or enrollment in the MAcc program.

Typically Offered
On sufficient demand

MKTG 880 - Applied Marketing Analytics

Credits 3

Business Intelligence is a systematic approach to harnessing customer data and competitive information to drive strategic business decision making. This course deals with how to collect and analyze business data to enhance quality of decision making in modern enterprises. Unlike courses based on data mining (inductive approach), this course will be largely based on regression techniques (deductive approach). The course will be based on lectures, case analysis, and hands on exercises to make students comfortable with powerful computing tools used for data

analysis. The cases and exercises will be bundled with data which will be used to apply concepts learned in class to real business situations.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student standing.

Typically Offered

Spring

MKTG 881 - Advanced Marketing Analytics

Credits 3

Students will gain an understanding of econometric and statistical methods of analysis and their application to business problems. Through lectures and exercises, student will use software tools often used in business for data analysis. Students will also learn how to interpret and apply the results from the software in data analyses. Emphasis will be placed on the application of econometric and statistical methods of data analyses. Topics will include customer choice analysis, customer segmentation and targeting, customer lifetime value calculation, and forecasting.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student standing.

Typically Offered

Fall

MKTG 891 - Special Topics in Marketing

Credits 3

Investigation and discussion of a selected topic in marketing. One of the following five topics will be chosen for intensive study: (1) industrial marketing management, (2) advanced consumer behavior, (3) product policy, (4) financial aspects of marketing management, (5) marketing in the service sector.

Repeat for Credit

Y

Requisites

Prerequisite: MKTG 705 or 6 hours of marketing.

Typically Offered

On sufficient demand

MLANG 001 - Study Abroad

Credits 0

Study Abroad

Repeat for Credit

Y

Typically Offered

Fall, Spring

MLANG 100 - Beginner Studies in Foreign Language

Credits 1-5

Course used to transfer credit for first and second semester language courses not offered at K-State. Consultation for approval is expected.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

MLANG 106 - Legal Terminology: Latin and French for Law Professions

Credits 2

Designed to familiarize students with vocabulary at use in the American legal system. Teaches basic French and Latin components used in legal terminology.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MLANG 110 - Hebrew for Beginners

Credits 2

An introduction to the Hebrew language and the culture of the people who speak the language. This general introduction includes skill development in reading, writing, and speaking basic Hebrew.

Note

Designed specifically for English-speaking students.

Repeat for Credit

N

Typically Offered

Intersession

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 120 - Multilingualism in the U.S.**Credits 3**

Examines the sociolinguistic and sociocultural coexistence among English and varied minority languages (e.g., French, Chinese, Spanish, and German) through different blocks or content units. Students will gain an appreciation for multiculturalism and multilingualism in the U.S. while expanding their awareness concerning global issues. To this end, the students will learn and engage in discussions about race, identity, migration, acculturation, syncretical views and practices, language variation, and linguistic adaptability as experienced by multilingual communities with diverse ethnic backgrounds.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

MLANG 200 - Intermediate Studies in Foreign Language I**Credits 1-5**

Course used to transfer credit for third semester language courses not offered at K-State.

Note

Prior consultation for approval is expected.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

MLANG 280 - Studies in World Literature and Culture**Credits 1-5**

Provides the students the opportunity to investigate in detail a particular theme or genre in World literature or culture. Taught in English.

Note

Topics will vary.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

ENGL 280

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 297 - Honors Introduction to the Humanities I**Credits 3**

Study of selected major works of history, literature, and philosophy which have been of central importance in the Western cultural tradition. Considerable emphasis is placed on classroom discussion and writing interpretive essays.

Note

Limited to entering freshman students. Consent of instructor.

Repeat for Credit

N

Typically Offered

Interession

Crosslisted

ENGL 297, HIST 297, PHILO 297

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 298 - Honors Introduction to the Humanities II**Credits 3**

Continuation of MLANG 297.

Repeat for Credit

N

Requisites

Prerequisite: MLANG 297 or consent of instructor.

Typically Offered

Fall

Crosslisted

ENGL 298, HIST 298, PHILO 298.

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 300 - Intermediate Studies in Foreign Language II**Credits 1-4**

Course used to transfer credit for fourth semester language course not offered at K-State.

Note

Prior consultation for approval is expected.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

MLANG 301 - Languages and Your Future**Credits 1**

Investigation and application of resources for developing language and culture skills, as well as a knowledge base about related fields and careers. Taught in English.

Note

Recommended for Modern Languages majors and minors.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

MLANG 398 - Intermediate Studies in Foreign Language**Credits 1-6**

Offered only to participants in study abroad programs. Prior consultation for approval is expected.

Repeat for Credit

Y

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 399 - Honors Seminar in Modern Languages**Credits 1-3**

Reading and discussion of selected masterpieces of European literature in English translation.

Note

Open to non-language majors in the honors program.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 499 - Honors Project**Credits 3**

Open only to Arts and Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MLANG 500 - K-State in Berlin**Credits 3**

K-State in Berlin

Repeat for Credit

N

Typically Offered

Other

MLANG 507 - European Literature in Translation**Credits 3**

Selected readings in English from the major authors of Europe and the Spanish-speaking world.

Note

Courses taught in English.

Repeat for Credit

N

Typically Offered

Other

MLANG 600 - Principles of Linguistics: Language Structure and Language Use**Credits 3**

Introduction to the fundamentals of linguistic analysis, including the sound system (phonetics and phonology), word formation (morphology), sentence formation (syntax), meaning (semantics and pragmatics). Formal and functional (usagebased) perspectives. Application of linguistics to language acquisition theory and to pedagogy.

Repeat for Credit

N

Requisites

Prerequisite: For ML majors & minors: GRMN 523 or GRMN 527, or FREN 513 or FREN 518 or one 700-level class, or SPAN 410 or SPAN 420 or SPAN 510; For other majors: ENGL 200.

Typically Offered

Fall

MLANG 710 - Foreign Language Pedagogy**Credits 3**

Second and foreign language pedagogical theory is combined with the examination of practical concerns in the teaching of languages, in order to provide future and current instructors with the necessary background for making informed decisions concerning classroom practices. Taught in English.

Note

Instructor approval required.

Repeat for Credit

N

Typically Offered

Fall

MLANG 711 - Teaching Language Online

Credits 3

Online education pedagogical theory is combined with the examination of practical concerns in the teaching of languages (second and foreign) in an online environment. Students explore various ways to adapt second and foreign language teaching practices for various online environments, such as synchronous and asynchronous learning, hybrid and hyflex course design, and self-paced formats. Provides future and current instructors with the tools that they need to create and teach in online environments. Taught in English.

Repeat for Credit
N

Typically Offered
Fall or Spring

MLANG 720 - Introduction to Literary Theory and Research Methodology**Credits 3**

An overview of theoretical approaches and classical texts that inform current trends in literary research in the modern languages.

Repeat for Credit
N

Typically Offered
On sufficient demand

MLANG 770 - Theories of 2nd Language Acquisition**Credits 3**

Introduction to the major theoretical frameworks of second language acquisition (SLA). Reading, discussion, and analysis of SLA research on a variety of linguistic and learning issues. Of interest to students of both language acquisition and literature. Taught in English.

Note
Instructor approval required.

Repeat for Credit
N

Typically Offered
Spring

MLANG 779 - Seminar in Modern Languages**Credits 3**

Variable topics.

Repeat for Credit
N

Typically Offered
Fall

MLANG 799 - Problems in Modern Languages**Credits 1-18**

Problems in Modern Languages

Repeat for Credit
N

Typically Offered
Other

MLANG 800 - Colloquium in Modern Languages**Credits 2**

A graduate colloquium for M. A. candidates in French, German, and Spanish. Variable topics in literary and cultural fields appropriate to study in common by students in these languages.

Repeat for Credit
Y

Typically Offered
Other

MLANG 803 - Practicum in Adult TESL/TEFL: Written and Oral Communication**Credits 3**

Overview of current issues and methodology in TES/FL and foundation for further exploration of teaching techniques used in skill specific areas of oral and written communication (including listening, speaking, reading, and writing). Provides students with training in TES/FL for adult learners. Students will acquire specific content and

practice in defined skill areas.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

MLANG 804 - Seminar/Topics in TESL/TEFL

Credits 3

Variable topics on different aspects /areas of TEFL, e.g., pragmatics, assessment, and writing, etc. Overview of key concepts for each topic, issues, and methodology, discussion of its applications in TEFL. Equip students with the necessary knowledge and skills to competently teach different areas in TEFL.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

MLANG 805 - Second Language Assessment

Credits 3

Explores the basic concepts, principles, and methodology of second language assessment.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall, Spring, Summer

MLANG 899 - Research in Modern Languages

Credits 1-18

Research in Modern Languages

Repeat for Credit

Y

Typically Offered

Fall

MLAS 100 - Survey of Machine Learning and Autonomous Systems

Credits 3

Rapid progress has been made in the development of autonomous systems. Terrestrial robotics, interplanetary systems, planetary robotics, uncrewed aerial systems, remote sensing platforms, and autonomous automobiles have all made great advances. These technologies have been enhanced by advances in artificial intelligence (AI). A non-programming perspective, this course will survey the current state-of-the-art perspective on artificial intelligence technologies used in autonomous systems. We start by presenting both ML-based and AI-based architectures that form the basis of perception, path planning, cognitive arbitration, and motion control.

Repeat for Credit

N

Typically Offered

Fall

MLAS 200 - Introduction to Automata and Cybernetic Systems Theory

Credits 3

This introductory course is a survey of the most common machine learning approaches used in creating descriptive and predictive analytical solutions. Students will be introduced to both the theoretical concepts and practical applications of machine learning and autonomous system. The course material introduces the probabilistic programming paradigm. Case studies will be used to illustrate the application of probabilistic programming frameworks in an applied industrial perspective.

Repeat for Credit

N

Requisites

Corequisite: MLAS 100

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MLAS 350 - Data Structures for Machine Learning

Credits 3

This course will cover the design, development, and employment of data structures and algorithms with an emphasis on time-space complexity. Data structure processing and computational processing problems related to the following time-space problems will be explored: constant, logarithmic, cubic, quadratic, polynomial, and exponential. Additionally, students will leverage Bachmann-Landau notation to describe time-space complexity.

Repeat for Credit

N

Requisites

Prerequisite: MLAS 200 and CYBR 335

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MLAS 390 - Unsupervised Learning in Autonomous Systems

Credits 3

Unsupervised learning is a type of machine learning that looks for previously undetected patterns in a data set with no pre-existing labels and with a minimum of human supervision. Using probabilistic programming languages, students will learn how to develop, interpret and deploy unsupervised machine learning models within autonomous systems. Common machine learning algorithms for unsupervised learning will be leveraged: k-means clustering, principal component analysis, non-negative matrix factorization, singular decomposition, and density-based spatial clustering of application with noise.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 and MLAS 350 or CC 315

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

MLAS 400 - Supervised learning in Autonomous Systems

Credits 3

Supervised learning is the machine learning task of learning a function that maps an input to an output based on example input-output pairs. Using probabilistic programming languages, this course will illustrate supervised machine learning concepts via data preparation, training data, model evaluation, and operationalization. Common machine learning algorithms for supervised learning such as K-nearest neighbors, logistic regression, decision trees and random forests will be explored and operationalized within an autonomous system.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 and MLAS 350 or CC 315

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

MLAS 410 - Natural Language Processing

Credits 3

This course gives an overview of modern data-driven techniques for natural language processing. We will discuss all the steps that are required for NLP such as text classification, neural nets for text classification, language modeling, word embedding, sequence labeling, context free grammar, constituency parsing, dependency parsing syntax, computational ethics, information extraction, conversational agents, machine translation and computational social science.

Repeat for Credit

N

Requisites

Prerequisite: MLAS 350

Typically Offered

Fall or Spring

MLAS 412 - Deep Learning**Credits 3**

This advanced deep learning course is designed to provide students with a comprehensive understanding of deep learning techniques, their applications, and the practical skills needed to work with deep neural networks. By the end of this course, students will have the knowledge and skills to design, implement, and evaluate advanced deep learning models for a wide range of applications.

Repeat for Credit

N

Requisites

Prerequisite: MLAS 350

Typically Offered

Fall or Spring

MLAS 500 - Reinforcement Learning in Autonomous Systems**Credits 3**

This course will guide students through the development and operationalization of reinforcement learning frameworks. Reinforcement learning architectures such as Markov decision processes, Q-Learning, artificial neural networks, recurrent neural networks, and generative adversarial networks will be explored. This course is a guide to the complexities of reinforcement learning, their respective architectures and implementations within an autonomous system.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 and MLAS 350 or CC 315

Typically Offered

Fall

MLAS 501 - Artificial Intelligence Studio**Credits 3-6**

Students are expected to develop and operationalize an artificially intelligent framework using applied statistical methods, techniques in probabilistic programming, and principles of artificial intelligence. Students will be required to document underlying AI theories and demonstrate an operationalized AI framework.

Repeat for Credit

Y

Requisites

Corequisite: MLAS 390 or MLAS 400 or MLAS 500

Typically Offered

Fall, Spring, Summer

MLAS 502 - Autonomous Systems Senior Capstone**Credits 6**

Students are expected to develop and operationalize an autonomous system using cybernetic principles of learning, computational frameworks, quantitative methods, and principles of engineering. Students will develop project documentation as needed to describe their autonomous systems project. Lastly, students will be required to successfully defend their project via a final oral presentation to associated faculty members. Whenever feasible, real-world projects are solicited from businesses.

Repeat for Credit

N

Requisites

Prerequisite: MLAS 390, MLAS 400, and MLAS 500

Typically Offered

Spring

MLAS 650 - Autonomous Systems Architecture Studio**Credits 3**

This course introduces the conceptualization and architectural development of cognitive processing engines within an autonomous system that also includes the architecture of autonomous systems, design of agents, models and knowledge representations, control of robotic manipulators, machine vision, the dynamics of wheeled,

air, space and underwater robots, navigation and localization.

Repeat for Credit

N

Requisites

Prerequisite: Experience with computer programming.

Typically Offered

Fall, Spring

MLAS 700 - Advanced Cybernetic Systems Development

Credits 3

This course is focused on the design and development of cognitive processing engines within the context of the larger autonomous system. General cybernetic theories will be used in specific example where students will gain experience designing and implementing computerized feedback control systems. The principles of cybernetics are universal so that students will be able to transfer their understanding and skills to other industrial domains.

Repeat for Credit

N

Requisites

Prerequisite: MLAS 650

Typically Offered

Fall, Spring

MLAS 750 - Autonomous Networking within Cyber-Physical Systems

Credits 3

Students will design and develop communication frameworks for cognitive processing engines within autonomous systems connected to CPS frameworks. The development of communication infrastructures that connect bodied (and unbodied) autonomous entities will also be explored. Current literature, techniques, theories, and methodologies will be reviewed and discussed. Industry-base projects will help students creatively apply cutting-edge CPS research to their autonomous systems research problems.

Repeat for Credit

N

Typically Offered

Fall, Spring

MLAS 800 - Integrated Machine Learning and Autonomous Systems

Credits 3

Students will study and develop an intelligent autonomous system, integrating perception, manipulation, learning, planning, and interaction. The autonomous system will be capable of learning and performing a variety of tasks in real-world environments while collaborating with humans. Additional artificial intelligence topics include: contextual reasoning, knowledge representation, perception and control, deep learning, and transfer learning.

Repeat for Credit

N

Requisites

Prerequisite: MLAS/CYBR 750

Typically Offered

Fall, Spring

MPH 701 - Fundamental Methods of Biostatistics

Credits 3

A course emphasizing concepts and practice of statistical data analysis for the health sciences. Basic techniques of descriptive and inferential statistical methods applied to health related surveys and designed experiments. Populations and samples, parameters and statistics; sampling distributions for hypothesis testing and confidence intervals for means and proportions involving one sample, paired samples and multiple independent samples; odds ratios, risk ratios, simple linear regression. Use of statistical software to facilitate the collection, manipulation, analysis and interpretation of health related data.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

STAT 701

MPH 708 - Veterinary Epidemiology

Credits 2

Introduction to the principles and methods of veterinary epidemiology: emphasizing how diseases affect populations (and associated implications for individuals), and application to disease diagnosis, treatment, prevention, and control.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

DMP 708

MPH 720 - Administration of Health Care Organizations

Credits 3

Comprehensive review of current health care institutions and their response to the economic, social/ethical, political/legal, technological, and ecological environments.

Note

Three hours lecture

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

FNDH 720

MPH 754 - Introduction to Epidemiology

Credits 3

The purpose of this course is to introduce students to the basic principles and methods of epidemiology in order to recognize and understand how disease affects populations (and the associated implications for individuals). This course will prepare students to use epidemiologic methods to solve current and future challenges to diagnose, treat, prevent, and control disease during their professional training and throughout their career.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

DMP 754

MPH 802 - Environmental Health

Credits 3

This is a three-credit graduate-level course. Students will be exposed to professional practice of environmental sciences, epidemiology, toxicology, occupational health and industrial hygiene, and consumer health and safety. Topics include the methods for defining environmental contamination; identifying contaminants, pathogens and toxins; assessing risks and causality; determining health impact; ameliorating hazards; and protecting the population through waste management, regulatory programs, environmental inspections, food and product safety, and environmental policy. Participation is required.

Repeat for Credit

N

Typically Offered

Spring, Summer

Crosslisted

DMP - 802 Environmental Health

MPH 806 - Environmental Toxicology

Credits 2

An advanced toxicology course concerned with the occurrence, biological effect, detection, and control of foreign chemicals in the environment.

Repeat for Credit

N

Requisites

Prerequisite: Consent of staff.

Typically Offered

Spring

Crosslisted

DMP 806

MPH 818 - Social and Behavioral Bases of Public Health

Credits 3

The role of behavioral, social, psychological, economic, environmental, and social structural factors in both the occurrence of health problems in groups and populations, and in the development of the risk factors that contribute to these problems. Principles of health behavior change and the application of these principles to a variety of health issues as well as an emphasis on how social structural factors impact health are examined to better understand health behavior and health inequities in contemporary society.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate status in public health or kinesiology program.

Typically Offered
Fall

Crosslisted
KIN 818

MPH 840 - Public Health Practice

Credits 1-6

Supervised field experience in an international, state, local, or district health agency or other appropriate health agency.

Repeat for Credit
Y

Requisites
Prerequisite: Consent of instructor. FDSCI 840, DMP 840, FNDH 840, and KIN 840.

Typically Offered
Fall, Spring, Summer

Crosslisted
FDSCI 840, DMP 840, FNDH 840, KIN 840

MPH 854 - Intermediate Epidemiology

Credits 3

Epidemiologic principles of disease with a focus on measures of disease occurrence, association and impact, determinants of disease diagnostic test evaluation, study design and critical literature evaluation.

Repeat for Credit
N

Requisites
Prerequisite: DMP 708 or DMP 754 or equivalent AND STAT 701 or STAT 703 or DMP 830 or equivalent.

Typically Offered
Spring

Crosslisted
DMP 854

MSCI 100 - Introduction to Military Science and ROTC

Credits 1-18

Basic drill, physical fitness, rappelling, army values, military presentations and basic marksmanship.

Note
Two classroom hours, a required leadership lab, and three one-hour sessions of physical fitness per week. Participation in a weekend exercise is optional, but highly encouraged.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Ethical Reasoning and Responsibility

MSCI 101 - Introduction to Military Leadership

Credits 1-18

Principles of effective leading. Communication skills to improve individual performance and group interaction. Relation of military organizational ethical values to the effectiveness of a leader, incorporating perspectives of the evolution of the U.S. Military from colonial times through the modern era.

Note

Two classroom hours, a required leadership lab, and three one-hour sessions of physical fitness per week. Participation in a weekend exercise is optional, but highly encouraged.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

MSCI 200 - Self/Team Development**Credits 1-18**

Ethics-based military leadership skills that develop individual abilities and contribute to building effective teams. Oral presentations, leadership, land navigation, and basic military tactics.

Note

Two classroom hours; a required leadership lab; participation in three one-hour physical fitness sessions. Participation in a weekend exercise.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

MSCI 202 - Individual/Team Military Tactics**Credits 1-18**

Introduction to individual and team aspects of military tactics in small unit operations. Safety assessments, movement techniques, military orders process, rifle marksmanship, rappelling.

Note

Two classroom hours; a required leadership lab; participation in three one-hour physical fitness sessions. Participation in a weekend exercise is optional, but highly encouraged.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

MSCI 206 - Leaders Training Course**Credits 0-4**

A five-week summer camp conducted at Fort Knox, Kentucky. The United States Army provides pay, travel, lodging and meal costs. No military obligation incurred.

Note

Open only to students who have not completed all four of MSCI 101, MSCI 102, MSCI 201, and MSCI 202, and who pass a physical examination (paid for by ROTC).

This course is a summer camp and the student receives their grade in the Fall semester.

Repeat for Credit

N

Typically Offered

Fall, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

MSCI 301 - Leading Small Military Organizations I**Credits 1-18**

Series of practical opportunities to lead small groups in situations of increasing complexity. Uses small unit defensive tactics and opportunities to plan and conduct training.

Note

Three classroom hours, a leadership lab, participation in three one-hour physical fitness sessions. Participation in one weekend exercise is required, and one or two additional weekend exercises are offered for optional participation.

Repeat for Credit

N

Requisites

Prerequisite: Completion of the basic course. Instructor permission required for enrollment.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

MSCI 302 - Leading Small Military Organizations II

Credits 1-18

Continues methodology of MSCI 301. Military missions and task analysis. Ethical decision making and lessons from leadership case studies.

Note

Three classroom hours, a leadership lab, participation in three one hour physical fitness sessions. Participation in one weekend exercise is required; two other weekend exercises optional.

Repeat for Credit

N

Requisites

Prerequisite: Completion of MSCI 301 and instructor permission.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MSCI 306 - Leaders Development and Assessment Course

Credits 0-4

A five-week camp conducted at Fort Lewis, Washington, by members of Kansas State University and other university Army ROTC faculty. The U.S. Army provides pay, travel, lodging and most meal costs. Highly structured and demanding, stressing leadership at small unit levels under varying, challenging conditions.

Repeat for Credit

N

Requisites

Prerequisite: MSCI 301 and MSCI 302.

Typically Offered

Fall, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MSCI 351 - Military Leadership Studies and Practical Applications

Credits 1-18

Independent research, analysis and monthly discussion on related military topics. Small unit tactics and practical application of leadership skills and individual research projects.

Note

Three classroom hours per week, a leadership lab, participation in three one-hour physical fitness sessions. Participation in one weekend exercise is required; two other weekend exercises optional.

Repeat for Credit

N

Requisites

Prerequisite: MSCI 301 or MSCI 302. Instructor permission.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MSCI 401 - Leadership Challenges and Objective-Setting

Credits 1-18

Plan, conduct, and evaluate activities of the ROTC cadet organization. Articulate goals, put plans into action to attain

them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people and manage resources. Learn and apply various Army policies and programs.

Note

Three classroom hours, a two-hour leadership laboratory, and weekly physical fitness activities. Cadets will also participate in a weekend field training exercise (FTX) and a formal military social event.

Repeat for Credit

N

Requisites

Prerequisite: MSCI 301 and MSCI 302 or department head permission.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MSCI 402 - Transition to Lieutenant

Credits 1-18

Continues the methodology from MSCI 401. Identify and resolve dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law as relate to leading as an officer in the United States Army. Prepare for a future as a successful United States Army lieutenant.

Note

Cadets will also participate in a weekend field training exercise (FTX) and a formal military social event.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

MSCI 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program and Advanced Military Science Curriculum (must have completed the Basic Military Science Curriculum or received United States Army Cadet Command credit through prior military service or completion of the Leaders Training Course).

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MSCI 501 - Advanced Transition to Lieutenant I

Credits 1-18

Independent research, analysis and monthly discussion on related military topics. Personal, academic, and professional goals and objectives, development and maintenance of an officer evaluation report support form.

Repeat for Credit

N

Requisites

Prerequisite: MSCI 401 and MSCI 402 or department head permission.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MSCI 502 - Advanced Transition to Lieutenant II

Credits 1-18

Independent research, analysis, and monthly discussion on related military topics. Personal, academic, and professional goals and objectives, development, and maintenance of an officer evaluation report support form.

Repeat for Credit

N

Requisites

Prerequisite: MSCI 501.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

MUSIC 050 - Recital Attendance**Credits 0**

Recital Attendance

Repeat for Credit

Y

Typically Offered

Spring

MUSIC 060 - Piano Proficiency**Credits 0**

Required for graduation of all music majors.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 100 - Introduction to Music Theory**Credits 3**

Introduction to the theory of music for non-music majors, including the skills needed to read and write Western music notation and to understand the rhythmic, melodic, harmonic, and structural elements of music.

Note

Limited to non-music majors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 101 - A New Rhythm: Cultivating a Healthy Life in College and Beyond**Credits 1**

Designed to empower today's young adults to better understand strategies and activities that support lifelong health and wellness. Resources and course curricula will address physical, mental, emotional, social, environmental, and spiritual (seeking one's purpose) wellness practices.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 103 - Voice Class I**Credits 1**

A beginning course in the basics of singing for non-music majors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 104 - Voice Class II**Credits 1**

Singing technique skills beyond the basics to include performance skills for non-music majors.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 103.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 111 - Concert Choir

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 112 - University Choir

Credits 0-1

Open to all K-State students without audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 113 - University Band

Credits 0-1

Open to all interested wind and percussion performers without audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 114 - Cat Band

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 115 - Marching Band

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 116 - Concert Band

Credits 0-1

Open to all interested wind and percussion performers without audition.

Repeat for Credit

Y

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

MUSIC 117 - Wind Symphony

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 118 - Jazz Ensemble Lab A

Credits 0-1

An intermediate level college jazz ensemble. Examine and perform various jazz ensemble pieces selected from extant literature which may include cool, swing, hard bop, bossa, Latin, samba, funk/rock, and other styles.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 119 - Madrigal and Motet Ensemble

Credits 0-1

Vocal chamber ensemble open to any KSU student by audition. Ensemble performs literature from the Middle Ages through the 18th century. Rehearses once per week and perform one or two concerts per semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 120 - Recorder Ensemble

Credits 0-1

Recorder Ensemble is open to all KSU students. The ensemble performs literature from the Middle Ages through contemporary compositions. Rehearses once per week and performs one or two concerts per semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 121 - Collegiate Chorale

Credits 0-1

Open to all interested singers. Audition determines membership in this and other choral organizations.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 129 - University Orchestra

Credits 0-1

A non-audition ensemble open to all KSU string musicians who perform literature ranging from grade levels 1-3. Conducted by KSU string education majors, students rehearse once per week and perform one or two concerts throughout the spring semester.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 130 - Symphony Orchestra

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 131 - Theatre Orchestra

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 135 - University Tenor/Bass Choir**Credits 0-1**

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 140 - University Treble Chorus**Credits 0-1**

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 150 - History of Musical Instruments**Credits 2-3**

The development of musical instruments in each period of Western music.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 151 - Women in Music**Credits 3**

Explores music composed by women. Features western art music from the traditional stylistic periods, women's contributions to jazz, popular, and some world music. Examines women's roles as performers and patrons, and attitudes toward female musicians.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 152 - Introduction to Film Music**Credits 3**

Explores the evolution of the cinematic soundtrack. Introduces students to notable film composers, film-scoring techniques, and significant works in this genre. Designed for non-music majors and does not require previous musical training, also open to music majors.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 153 - History of Jazz**Credits 3**

Survey of jazz styles and personalities.

Note

For music majors and non-majors.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

MUSIC 154 - Salsa: Afro-Cuban Music of the Past and Present**Credits 3**

Appreciation, historical knowledge, mechanics, aesthetics, and cultural contexts of salsa.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

MUSIC 155 - Jazz in Kansas City and the Southwest**Credits 2-3**

The history and development of jazz styles in Kansas City and the southwestern United States, emphasizing the influence on styles of other geographic areas.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

MUSIC 156 - Introduction to the Broadway Musical**Credits 3**

The history of operetta, Broadway musicals, and musical comedy.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

MUSIC 157 - Introduction to American Music**Credits 3**

An introduction to the functions of music in American society and the elements of music, including a survey of the development of various types and styles of music in America.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

MUSIC 160 - Experiencing Live Music**Credits 2-3**

Through attendance at professional music performances, guest speakers, panel discussions, and course readings, students will develop the vocabulary and critical listening skills to understand and discuss music and the socio-cultural factors that shape the experience of music performances. Students will critically examine how music experiences change or remain the same across formats, cultures, and styles, including popular music, jazz, Western art music, and world music traditions. Students will have the option to take this course for three (3) credits which will add a action research project as part of this experience.

Repeat for Credit

N

Requisites

Prerequisite: Limited to non-music majors.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 170 - History of Rock and Roll**Credits 3**

A study of Rock and Roll from its origins through today, focusing on the development of rock styles from its roots in blues, folk, country, and pop. Expansion of listening experience through study of song forms, musical instruments of rock, and the socio-political significance of song lyrics. Examinations, research paper required.

Note

Student need not be able to perform or read music.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

**MUSIC 171 - Inventing the Future:
Underground Rock: 1968-1993****Credits 3**

An introduction to the underground rock music, musicians, and scenes from the 1960's to the 1990's that have proven most influential on modern popular music and culture.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

MUSIC 172 - History of Country Music**Credits 3**

History of country music's identity in American culture.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

**MUSIC 173 - Music as Protest and
Propaganda in the United States****Credits 3**

Explores music's transformative role in protest movements and as propaganda in the United States from 1775-present. Curated playlists from Jazz, Country, Soul, Hip Hop, Rock, Spirituals, and more encourage students to analyze sociopolitical issues through historical and contemporary music. Emphasis on musical responses to racial and ethnic inequities.

Note

Ability to read or perform music NOT required.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

MUSIC 174 - History of Hip Hop**Credits 3**

Students will explore a basic body of knowledge about the

history and emergence of rap music, components to its evolution, influences and representation of hip hop culture.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MUSIC 203 - Vocal Techniques I

Credits 1

A beginning course in the basics of singing and teaching skills.

Note

For music education majors whose emphasis is instrumental music.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 204 - Vocal Techniques II

Credits 1

Singing and teaching skills beyond the basics and presentation of materials suitable for private and public school instruction at the secondary level.

Note

For music education majors whose emphasis is instrumental music.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 203.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 205 - Music for Elementary Teachers

Credits 3

The contribution of music to child development in elementary schools. A study of music literature suited to children through the development of purposive listening and the expressive phases of music including rhythmic response, singing, playing, reading, and writing.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 208 - Guitar Class I

Credits 1

Beginning-level group instruction in guitar performance.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 210 - Music Theory I

Credits 3

An introduction to the basic language of music; scales, triads and seventh chords, and all simple intervals. Written and aural skills reinforce concepts of melody, rhythm, and harmony.

Repeat for Credit

N

Requisites

Prerequisite: Tested knowledge of basic music reading and aural skills.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 211 - Piano Class I

Credits 1

For students with no piano background. Topics covered will include notation, intervals, accompaniment patterns, major scales, triads, basic progressions, and musicianship.

Note

Sections also available for non-music majors and non-degree students.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

MUSIC 212 - Piano Class II

Credits 1

Covers minor scales and arpeggios, minor chords, black-key major and minor scales, seventh chords, and harmonization.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 211.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 213 - Piano Class III

Credits 1

Reinforces and expands the skills introduced in the previous levels: harmonization, transposition, sight-

reading, improvisation, and technical exercises continue to be at the core of the curriculum, while introducing new concepts such as transposing instruments, secondary chords, and both instrumental and vocal accompanying.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 212.

Typically Offered

Fall

MUSIC 214 - Piano Class IV

Credits 1

Reinforces and expands the skills introduced in previous levels: harmonization, transposition, sight-reading, improvisation, and technical exercises continue to be at the core of the curriculum, while introducing new concepts such as modulations, alto clef reading, augmented and Neapolitan sixth chords, and vocal warm-ups. Passing the final exam for this course fulfills the piano Proficiency requirements (MUSIC 060).

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 213.

Typically Offered

Spring

MUSIC 220 - Topics in Music

Credits 1-3

Exploration of the musical dimensions of a particular topic or theme. Topics vary.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 230 - Music Theory II

Credits 3

Continued experience with the language of music. Part-writing, analysis, composition.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or higher in MUSIC 210 or tested knowledge of basic music theory and concurrent enrollment in MUSIC 231.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 231 - Aural Skills I

Credits 1

Development of aural skills through sight singing, rhythmic training, and ear-training; melodic, rhythmic, and harmonic dictation to reinforce concepts in Music Theory II.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or higher in MUSIC 210 or tested knowledge of music.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 232 - Fundamentals of Teaching Music

Credits 2

Techniques, materials, and experiences for a variety of music classes will be examined through discovery. Furthermore, lesson plan development, writing, and implementation will be examined in detail.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 233 - English Diction

Credits 1

Focuses on enunciation and transcription of the English language as it applies to lyric (sung) diction using the international Phonetic Alphabet (IPA). Familiarity with proper pronunciation is gained through listening, singing, and transcription assignments.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 234 - String Techniques and Materials

Credits 1

A beginning course in the fundamentals of playing and methods for teaching stringed instruments.

Note

For music majors only, and not open to string majors.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 235 - Percussion Techniques and Materials

Credits 1

The fundamentals of playing and methods of teaching percussion instruments.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 236 - Clarinet & Saxophone Woodwind Techniques and Materials

Credits 1

A course in the fundamentals of playing and methods for teaching single reed woodwind instruments.

Note

For music majors only.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 237 - Double Reed and Flute Woodwind Techniques and Materials

Credits 1

A course in the fundamentals of playing and methods for teaching double reed and flute woodwind instruments.

Note

For music majors only.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 238 - High Brass Techniques and Materials

Credits 1

A course in the fundamentals of playing and methods for teaching high brass instruments.

Note

For music majors only.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 239 - Low Brass Techniques and Materials

Credits 1

A course in the fundamentals of playing and methods for teaching low brass instruments.

Note

For music majors only.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 240 - Advanced String Techniques and Materials

Credits 1

Playing and teaching skills beyond fundamentals and presentation of materials suitable for private and public school instruction at the secondary level.

Note

Required of all instrumental majors in music education.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 234.

Typically Offered

Spring

MUSIC 241 - Italian Diction

Credits 1

Rules for pronouncing and translating Italian vocal texts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 242 - French Diction

Credits 1

Rules for pronouncing and translating French vocal texts.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 243 - German Diction

Credits 1

Rules for pronouncing and translating German vocal texts.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

MUSIC 244 - West African Drumming and Percussion

Credits 2

Explores several styles of drumming and African Xylophone playing from the Ga, Dagara, and Ewe traditions from Ghana and other parts of West Africa. Instruction, includes but it is not limited to playing techniques and musical structure for drumming and Xylophone playing as associated with common recreational dances. No prior experience is necessary.

Note

All musical instruments are supplied for class. Students may use their own instruments.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MUSIC 246 - Drumset Techniques

Credits 1

Develops and refines skills, vocabulary, and rhetoric necessary to performing as a functional drummer in a variety of settings and styles. Topics of focus will include building a groove vocabulary, expanding listening to a wide variety of drummers, developing physical coordination at the kit, and reading drum charts for maximum musicality.

Repeat for Credit

N

Requisites

Recommended Foundation: Previous percussion experience

Typically Offered

Fall, Spring

MUSIC 248 - Songwriting

Credits 3

Basic music theory pertaining to the creation of a melody and the harmonization of that melody; how to craft creative lyrics, identify song form, and write a song using the most common and relevant forms in popular music.

Repeat for Credit

Y

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 249 - Introduction to Music of the World

Credits 3

This course will develop listening skills and an understanding of the meaning of music from around the world. Students will discover how music can be used as a form of human expression, and also reflect the culture in

which it was created. Due to the non-Western focus, cultural background and perspective will be provided for each population discussed including the influence of music within and upon societies and its members highlighting issues of human diversity outside the U.S.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

MUSIC 250 - Introduction to Music

Credits 3

An overview of music from chant to jazz, incorporating listening skills, elements of music, and music history. Designed to heighten the perception and enjoyment of music for the student listener.

Note

For non-music majors only.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 251 - Applied Study for Non-Music Majors

Credits 1-2

Applied study for non-music majors.

Note

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 254 - Secondary Performance

Credits 1-2

For students who wish to study an instrument or voice other than the major performance area. Instruction is offered every semester in voice and each of the following instruments: baritone, bassoon, clarinet, double bass, early winds, flute, French horn, guitar, harp, harpsichord, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, viola da gamba, violin, and violoncello.

Note

Students may enroll in more than one instrument simultaneously and may earn 1-2 hours per semester in each instrument.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 255 - Lower-Division Performance

Credits 1-4

Instruction and experience in solo performance is offered every semester in voice and each of the following instruments: baritone, bassoon, clarinet, double bass, early winds, flute, French horn, guitar, harp, harpsichord, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, viola da gamba, violin, and violoncello.

Note

Students may enroll in more than one instrument simultaneously and may earn 1 to 4 hours per semester in each instrument. Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 266 - Marching Band Techniques for School Music Educators

Credits 2

Practical techniques of marching band in school music programs and the skills necessary to design, organize, instruct, and evaluate a marching band show.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 267 - String Orchestra Pedagogy

Credits 2

This course is designed to prepare undergraduate students to be successful string educators. Students in this course will discuss and demonstrate knowledge of key topics including advanced string teaching strategies for both right and left-hand skills, string orchestra lesson plan design, program curricular development, recruitment and retention of students, the merging of supplemental pedagogical materials within the lesson plan, alternative performance styles, and administrative tasks specific to string teaching.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 268 - Vocal Pedagogy

Credits 2

Study of vocal production, exploring the scientific principles of breathing, resonance, timbre, and other vocal features. Discussion of vocal health and teaching styles will be included.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 280 - Lower-Division Ensemble Performance

Credits 1

Instruction is offered each semester in the following areas: brass, chamber music, concert jazz, jazz combo, strings, winds, percussion, and vocal ensemble.

Note

Admission is by audition and students may enroll in more than one ensemble simultaneously.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

MUSIC 320 - Music Theory III

Credits 3

Theoretical concepts of eighteenth-century music. Modulations, secondary function chords, counterpoint, and some chromatic harmony. Identify and work with elements of musical structure through exercises, analysis and composition.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 230 with grade of C or higher and concurrent enrollment in MUSIC 321.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 321 - Aural Skills II

Credits 1

Sight singing, rhythmic training, and ear-training through drills and dictation to reinforce concepts in Music Theory III.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 231 with grade of C or higher.
Corequisite: MUSIC 320.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 323 - Lower-Division Composition

Credits 1-18

Composition instruction through individual lessons and group seminar instruction.

Note

Instructor permission.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 350 - Collaborative Piano-Studio

Credits 1

Piano student assigned to studio instructor.

Note

Accompanies lessons for at least two hours a week. Ensemble credit for pianists. Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 351 - Collaborative Piano-Recital

Credits 1

Piano student assigned to a music major preparing for graduation recital.

Note

Pianist accompanies student in lessons and presents the formal public program as course requirement. Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 360 - Music Theory IV

Credits 3

Theoretical concepts of late nineteenth-century music and twentieth-century music: chromatic harmony and twentieth-century compositional techniques, analysis, and composition. Identify and work with elements of musical structure.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 320 with grade of C or higher.

Corequisite: MUSIC 361.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 361 - Aural Skills III

Credits 1

Sight singing, rhythmic training, and ear-training through drills and dictation to reinforce concepts in Music Theory IV.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 321 with grade of C or higher.

Corequisite: MUSIC 360.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 362 - Aural Skills Proficiency

Credits 0

Required for graduation of all music majors.

Repeat for Credit

Y

Requisites

Prerequisite: MUSIC 320 or concurrent enrollment.

Typically Offered

Fall, Spring

MUSIC 365 - Conducting**Credits 1**

Techniques of the baton gestures, signs, and cues as generally used in conducting choral and instrumental organizations.

Note

For music majors only.

Repeat for Credit

N

Requisites

Prerequisite: COMM 106 or 109 and a grade of C or higher in MUSIC 320 and MUSIC 321.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 373 - Jazz Guitar Seminar**Credits 1**

Listening to jazz guitar literature, performing, and offering meaningful critique.

Repeat for Credit

N

Requisites

Prerequisite: Audition. Corequisite: MUSIC 696, MUSIC 698.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 391 - Keyboard Pedagogy**Credits 2**

A systematic study of pedagogy which examines effective teaching methods and aids in the development of a philosophy of professional teaching.

Repeat for Credit

N

Requisites

Prerequisite: Keyboard majors with concurrent enrollment in MUSIC 455.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 400 - Concert Choir**Credits 0-1**

Admission by audition.

Repeat for Credit

Y

Typically Offered

On sufficient demand

K-State 8

Aesthetic Interpretation

MUSIC 401 - Concert Band**Credits 0-1**

Open to all interested wind and percussion performers without audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 402 - Wind Ensemble

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 403 - Collegiate Chorale

Credits 0-1

Open to all interested singers. Audition determines membership in other choral organizations.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 404 - Symphony Orchestra

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 406 - Collegiate Jazz Ensemble

Credits 0-1

An advanced level college jazz ensemble. Examines and preforms various jazz ensemble pieces selected from extant literature which may include cool, swing, hard bop, bossa, Latin, samba, funk/rock, and other styles.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 408 - University Tenor/Bass Choir-Upper Division

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 409 - University Treble Chorus-Upper Division

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 411 - Marching Band

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

MUSIC 412 - University Band

Credits 0-1

Open to all interested wind and percussion performers by audition.

Repeat for Credit

Y

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

MUSIC 414 - Theatre Orchestra

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 416 - Cat Band Upper Division

Credits 0-1

Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 418 - Wind Symphony

Credits 0-1

Using a player-pool concept, the ensemble will explore outstanding and varied wind literature. Repertoire may range from a classical octet to a one-on-a-part performance of a major large band work. Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 431 - Music Business 1

Credits 2

Provides students with the tools for a career in music. Topics covered include: resumes, curriculum vitas, developing music websites, creating an on-line presence, tax protocol for musicians, goal-setting strategies, and meeting short and long-term music business goals.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing

Typically Offered

Fall, Spring

MUSIC 432 - Music Business 2

Credits 2

Explores elements of the music industry including business frameworks, legal topics, and interpersonal relations. Projects are individualized to the student's specialty area within the music industry.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 431

Typically Offered

Fall, Spring

MUSIC 441 - Pop Music Icons

Credits 3

An exploration of the musical decisions that define the world's leading pop musicians and songwriters. Using directed listening and curated playlists, students will engage with musical offerings and develop an understanding of influences for each artist studied. Individual artists or collected groups of artists are examined in detail.

Note

No previous training is necessary, but prior work with the elements of music, songwriting, or a broad popular music course may be helpful.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 454 - Upper Division Secondary Performance

Credits 1-4

For students who wish to study an instrument or voice other than the major performance area. Instruction is offered every semester in voice and each of the following instruments: baritone, bassoon, clarinet, double bass, early winds, flute, French horn, guitar, harp, harpsichord, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, viola da gamba, violin, and violoncello. This course allows for upper-division study within their secondary instruments.

Note

This course is aligned with upper division performance courses (MUSIC 455) but is offered to students who are achieving at the upper-division level on their secondary instrument. Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 455 - Upper-Division Performance

Credits 0-4

Instruction and experience in solo performance is offered every semester in voice and each of the following instruments: baritone, bassoon, clarinet, double bass, early winds, flute, French horn, guitar, harp, harpsichord, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, viola da gamba, violin, and violoncello.

Note

Students may enroll in more than one instrument simultaneously and may earn 1 to 4 hours per semester in each instrument. Admission by audition.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 456 - Choral Conducting

Credits 1

Continued mastery of the skills in Conducting I while emphasizing essential techniques and interpretation for choral ensembles.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 365.

Typically Offered

Spring

MUSIC 457 - Instrumental Conducting

Credits 1

Continued mastery of the skills in Conducting while emphasizing essential techniques and interpretation for instrumental ensembles.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 365.

Typically Offered

Spring

MUSIC 458 - Music in the Schools, PK-6

Credits 3

The study of the musical characteristics of children and development of appropriate curriculum, instructional materials and techniques, and related technology for teaching musical understanding, literacy, multi-cultural connections, and creative improvisation in grades PK-6 instrumental, vocal, and general music.

Note

This course includes supervised field experiences.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315, EDCI 318, EDCI 320, and EDSP 323.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

MUSIC 459 - Music Programs in Middle School/High School

Credits 3

Organization and administration of the comprehensive music program in junior and senior high schools; including the study of vocal and instrumental ensemble development, as well as techniques and materials for other types of music classes.

Note

This course includes a supervised field experience.

Repeat for Credit

N

Requisites

Prerequisite: EDCI 315, EDCI 318, EDCI 320, and EDSP 323.

Typically Offered

Fall

MUSIC 460 - Teaching Beginning Instruments

Credits 1

Students will learn and employ techniques and strategies for teaching beginning band and orchestra instruments.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 234, EDCEP 315, EDCI 320, EDSP 323.

Typically Offered

Spring

MUSIC 461 - Advanced Studies in Music Education

Credits 2

Advanced instructional methods and technologies related to the teaching of music in grades pre-K-12 implemented through investigation of current trends in the field, advanced unit design, and field experience.

Repeat for Credit

Y

Requisites

Prerequisite: EDCI 315, EDCI 318, EDCI 320, EDSP 323, and MUSIC 458 with grade of C or higher or MUSIC 459 with a grade of C or higher.

Typically Offered

Fall, Spring

MUSIC 462 - Instrumental Jazz Instruction

Credits 1

Guides future instrumental teachers on techniques to teach jazz including beginning improvisation, combo, big band techniques, and school jazz literature.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 463 - Vocal Jazz Instruction

Credits 1

Guides future choral teachers on techniques to teach jazz including beginning improvisation, jazz choir, and school jazz literature.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 464 - Methods and Materials for the Studio**Credits 2**

Methods of teaching fundamental techniques; selection of teaching materials outlining courses of study. For undergraduate students in performance curricula. Taught in divisions according to the major. Practical application through supervised studio teaching.

Repeat for Credit

N

Requisites

Corequisite: MUSIC 455

Typically Offered

Fall, Spring, Summer

MUSIC 466 - Music History I: Ancient Greece to Beethoven**Credits 3**

An overview of stylistic trends, major composers, repertoire of ancient Greece, the Middle Ages, Renaissance and early Baroque periods.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100, ENGL 200, and a grade of C or higher in MUSIC 320.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

MUSIC 467 - Music History II: Beethoven to Present**Credits 3**

An overview of stylistic trends, major composers, repertoire of the late Classical period to present day.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100, ENGL 200, and a grade of C or higher in MUSIC 360 and MUSIC 361.

Typically Offered

Spring

MUSIC 468 - Music History III: 1850 to the Present**Credits 3**

An overview of the development of stylistic and cultural trends, major composers, and repertoire of the late Romantic period through the present.

Repeat for Credit

N

Requisites

Prerequisite: Grade of C or higher in Music 320.

Typically Offered

Fall

MUSIC 469 - Instrumentation and Arranging**Credits 2**

Study of writing and arranging for the strings, woodwinds, brass and percussion as well as choral ensembles. Functional ranges and practical applications through score study and projects.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 360, MUSIC 361

Typically Offered

Fall

MUSIC 475 - Opera Workshop

Credits 1-18

Principles and techniques of operatic and musical theatre production, with emphasis on class rehearsal and performance of selected scenes from opera and musical drama; brief survey of the history of opera.

Note

Offered jointly by the Departments of Music and Communication Studies. Vocal ensemble credit may be earned in this course.

Repeat for Credit

Y

Typically Offered

On sufficient demand

Crosslisted

THTRE 475

K-State 8

Aesthetic Interpretation

MUSIC 480 - Upper-Division Ensemble Performance

Credits 1

Instruction is offered each semester in the following areas: brass, chamber music, concert jazz, jazz combo, strings, winds, percussion, and vocal ensemble.

Note

Admission is by audition and students may enroll in more than one ensemble simultaneously.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

MUSIC 490 - Collegium Musicum

Credits 0-1

A vocal and instrumental ensemble devoted to the historically-informed performance of music written primarily during the Medieval, Renaissance, and Baroque periods (c. 1100-1750. Instruments of the historical period used when possible.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

MUSIC 500 - Applied Recital

Credits 0

Public performance; vocal or instrumental with a suggested performing time of 25 minutes. Intended for performances in addition to required recital performances (MUSIC 502 and/or 501).

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 255

Corequisite: MUSIC 255 or MUSIC 455

Typically Offered

Fall, Spring

MUSIC 501 - Half Recital

Credits 1

Public performance; vocal or instrumental with suggested performing time of 25 minutes.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MUSIC 502 - Full Recital

Credits 2

Public performance; vocal or instrumental with suggested performing time of 50 minutes.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MUSIC 523 - Upper-Division Composition

Credits 0-18

Composition instruction through individual lessons and group seminar instruction. Emphasis on meeting professional standards of composition and score/part preparation and creation of a varied portfolio of works.

Note

Submission of a portfolio of pieces for faculty review and approval.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 599 - Special Studies in Music

Credits 1-3

Special Studies in Music

Repeat for Credit

Y

Requisites

Prerequisite: Background of courses needed for studies undertaken.

Typically Offered

Fall, Spring, Summer

MUSIC 696 - Jazz Theory I

Credits 1

Basic fundamentals of jazz theory to develop critical thinking and performing skills.

Note

Instructor permission.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 697 - Jazz Theory II

Credits 1

Intermediate level fundamentals of jazz theory to develop critical thinking and performing skills.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 696, MUSIC 298.

Typically Offered

Fall

MUSIC 698 - Jazz Improvisation I

Credits 1

Develop skills in the area of jazz improvisation in a performance lab setting.

Note

Instructor consent.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 699 - Jazz Improvisation II

Credits 1

Continued development of jazz improvisational skills in a performance lab setting.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 697 or consent of instructor.

Typically Offered

Fall

MUSIC 700 - Literature Analysis**Credits 3**

Explore, evaluate, and analyze the masterworks of the wind, choral, and orchestral genres. This course will alternate annually between Instrumental and Choral literature.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 701 - Graduate Theory Review**Credits 2**

For graduate students in music for whom additional work in the harmonic and formal aspects of tonal and chromatic music is needed.

Note

This course does not fulfill degree requirements.

Repeat for Credit

N

Typically Offered

Fall, Summer

MUSIC 702 - Style Analysis**Credits 3**

Training in a comprehensive, systematic analytical approach to all style periods, and in verbalizing analytical perceptions.

Repeat for Credit

N

Typically Offered

Fall, Summer

MUSIC 703 - Graduate History Review**Credits 2**

For graduate students in music for whom additional work in music history is needed based on their performance on the Graduate Music History Entrance Exam. This course does not fulfill graduate degree requirements. A grade of an A or B is required to enroll in graduate level music history courses.

Repeat for Credit

N

Typically Offered

Fall, Summer

MUSIC 704 - Symphonic Literature**Credits 3**

The development of orchestral music from the late Baroque to the present, with emphasis on selected symphonies of the late eighteenth and nineteenth centuries.

Repeat for Credit

N

Typically Offered

Other

MUSIC 705 - Chamber Music Literature**Credits 3**

A selected survey of masterpieces of small ensemble music from 1750 to the present. Special emphasis on the string quartet.

Repeat for Credit

N

Typically Offered

Other

MUSIC 706 - Song Literature**Credits 3**

Survey, by historical period and national styles, of major solo vocal works.

Repeat for Credit

N

Typically Offered

Other

MUSIC 707 - History of Wind Bands**Credits 3**

Development of the wind band medium from the Renaissance to the present, with focus on the composers and literature.

Repeat for Credit

N

Typically Offered

Spring-Even Years

MUSIC 708 - Choral Literature**Credits 3**

A study of standard choral masterpieces in both large and small forms from 1450 to the present.

Repeat for Credit

N

Typically Offered

Other

MUSIC 709 - History of School Choral Music**Credits 3**

Development of choral music in schools with focus on composers and literature.

Repeat for Credit

N

Typically Offered

Other

MUSIC 710 - Percussion Pedagogy**Credits 2-3**

Advanced study of percussion instruments and related performance techniques, teaching methods and

responsibilities, organization, and literature.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 711 - Concert and Ethnic Percussion Techniques**Credits 2-3**

Advanced study of percussion performance techniques commonly associated with concert band and percussion ensemble, as well as percussion techniques associated with music of other cultures.

Note

The three credit-hour option includes additional assignments.

Repeat for Credit

N

Typically Offered

Other

MUSIC 712 - Jazz and Marching Percussion Techniques**Credits 2-3**

Advanced study of percussion performance techniques commonly associated with marching percussion and jazz idioms.

Note

The three credit-hour option includes additional assignments.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 713 - Survey of Vocal Solos for Adolescents**Credits 3**

An in-depth study of appropriate solo literature for adolescent singers.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 714 - Advanced Orchestration

Credits 2

The study of orchestra and band scores. Exercises in orchestrating this type of music for different choirs of instruments, as well as scoring for full orchestra and symphonic band.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 469.

Typically Offered

Spring

MUSIC 715 - Advanced Woodwind Techniques

Credits 2

Advanced techniques in the teaching of all woodwind instruments for music teachers.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 716 - Advanced Brass Techniques

Credits 2

Advanced techniques in the teaching of all brass instruments for music teachers.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 717 - Lower String Pedagogy

Credits 2

Study of low string technique and related teaching methods. Intended for teachers of string, concert/jazz bands and vocal music if they use a bass with accompaniment combos for pit orchestras or swing choirs.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 718 - Upper String Pedagogy

Credits 2

Study of violin technique and related teaching methods, also applicable to other bowed string instruments.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 719 - Marching Band Techniques

Credits 2

Philosophical and practical purposes of the marching band, and the skills necessary to design, organize, instruct, and evaluate a marching band show.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 720 - Choral Ensemble Techniques

Credits 2

Philosophical and practical study of the choral ensemble, and the skills necessary to design, organize, instruct and evaluate the choral program.

Repeat for Credit

N

Typically Offered
Summer

MUSIC 721 - Jazz Techniques

Credits 2

Basic practices found in jazz education, including literature, teaching techniques, and resource materials.

Repeat for Credit
N

Typically Offered
Summer

MUSIC 722 - Arranging for Bands

Credits 2

Assessing, evaluating, and applying the basic issues, techniques, and possibilities inherent in scoring and arranging for various windband media. Primary attention will be given to concert and marching bands, but students will also spend time learning about various jazz ensembles and other possible combinations of wind and percussion instruments.

Repeat for Credit
N

Typically Offered
Summer

MUSIC 723 - Arranging Choral Music

Credits 2

Application of basic compositional issues, techniques, and possibilities inherent in scoring and arranging for various choral ensembles.

Repeat for Credit
N

Typically Offered
Summer

MUSIC 724 - 18th Century Counterpoint

Credits 2

Contrapuntal compositional techniques from the late Baroque to Classical periods, including compositional procedures for the canon and fugue.

Repeat for Credit
N

Requisites
Prerequisite: MUSIC 360, MUSIC 361.

Typically Offered
Fall, Summer

MUSIC 725 - Theories of Contemporary Music

Credits 2

Introduction to analytical and compositional techniques applicable to the predominately non-tonal music of the 20th and 21st centuries.

Repeat for Credit
N

Requisites
Prerequisite: MUSIC 360, MUSIC 361.

Typically Offered
Spring, Summer

MUSIC 726 - History of the Opera

Credits 3

A study of selected masterpieces of musical drama, with emphasis on the relationship of music and drama, and on the unique qualities of opera as a collective artwork.

Repeat for Credit
N

Requisites
Prerequisite: MUSIC 320.

Typically Offered
Other

MUSIC 727 - Introduction to Historical Performance Practice

Credits 3

Studies the changing performance styles in music from the Middle Ages to the 18th century. Examines problems in the field of historical performance practices. Interpretation of musical performances (ornamentation, articulation, tuning, temperament, rhythmic elements, and tempo) based on contemporaneous sources. Students will perform short selections and prepare musical editions based on their findings.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 360

Typically Offered

Spring

MUSIC 728 - Advanced Instrumental Rehearsal Techniques**Credits 2**

Explore, evaluate, and develop the musical understanding and skills necessary in leading instrumental ensembles toward significant musical expression through effective rehearsal techniques.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 729 - Advanced Choral Rehearsal Techniques**Credits 2**

Explore, evaluate, and develop the musical understanding and skills necessary in leading choral ensembles toward significant musical expression through effective rehearsal techniques.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 730 - Organization and Administration of School Music Programs**Credits 2**

Provides models and ideas on organizing program/teaching to enable the teacher and students to succeed and enjoy the music making process. Present strategies and philosophies on dealing with administrators, parents, peers, and students will be discussed, as well as motivation of self and student.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

MUSIC 731 - Music Business 1**Credits 2**

Provides students with the entrepreneurial tools for a career in music. Topics covered include: resumes, curriculum vitas, developing music websites, creating an on-line presence, tax protocol for musicians, goal-setting strategies, and meeting short and long-term music business goals

Repeat for Credit

N

Requisites

Prerequisite: Junior Standing

Typically Offered

Fall, Spring

MUSIC 732 - Music Business 2**Credits 2**

Explores elements of the music industry including business frameworks, legal topics, and interpersonal relations. Projects are individualized to the student's specialty area within the music industry.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 731

Typically Offered

Fall, Spring

MUSIC 733 - Music Marketing and Management Internship

Credits 2

Students engage directly with the music industry through established internships in the area. Opportunities will vary by specialty and availability.

Note

Music 733 is the opportunity to engage in components of the music industry through various faculty facilitated internships or projects. The student will gain field experience, network, engage in large- and small-scale marketing structures, participate in career building projects, gain experience in administration, and audio-visual elements, and learn about management roles in both academic and professional situations. It will culminate in a data driven presentation or paper based on their cumulative internship experiences. Student internship types can vary based on specialty area and availability. Efforts will be made to match students with the best possible internship.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 731 and MUSIC 732

Typically Offered

Fall, Spring

MUSIC 734 - Technology of the Electronic Music Studio

Credits 2

Instrumentation and systematic procedures as applied to the construction of electronic music. Principles of voltage-controlled systems, synchronous tape machines, and audio mixing. Individual and team projects.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 323 or instructor consent.

Typically Offered

Fall, Summer

MUSIC 735 - Digital Sound Synthesis

Credits 2

Exploration of real-time interactive systems. Theory and application pertaining to the creation of instruments and scores using additive and FM techniques. Team projects.

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 734.

Typically Offered

On sufficient demand

MUSIC 737 - Organ Literature

Credits 3

A survey of significant compositions from the Renaissance to the present with emphasis on performance practice.

Repeat for Credit

N

Typically Offered

Other

MUSIC 738 - Piano Literature

Credits 3

Selective survey of music for piano from 1750 to the present.

Repeat for Credit

N

Typically Offered

Other

MUSIC 740 - Studies in Music Literature

Credits 3

Study of the repertory of a selected musical genre or medium of performance.

Repeat for Credit

N

Typically Offered

Other

MUSIC 759 - Techniques of Music Technology

Credits 2

Students develop skills of notation, scanning, manipulating, sequencing, and recording necessary to integrate digital technologies into the practice of music making and teaching.

Repeat for Credit

N

Typically Offered

Summer

MUSIC 766 - Seminar in the Life and Works of an Individual Composer

Credits 3

Study of the career and achievements of a selected composer of major stature.

Repeat for Credit

Y

Typically Offered

Fall, Summer

MUSIC 767 - Topics in American Music

Credits 3

Studies of the various genres of American music.

Repeat for Credit

Y

Typically Offered

On sufficient demand

MUSIC 791 - Advanced Vocal Pedagogy

Credits 2

Advanced study of vocal production, exploring the scientific principles of breathing, resonance, timbre, and other vocal features. Discussion of vocal health and teaching styles.

Repeat for Credit

N

Typically Offered

Other

MUSIC 799 - Problems in Music

Credits 1-18

Individual guided work in a selected area.

Note

No more than three hours of Problems in Music may be applied to the master's degree.

Repeat for Credit

Y

Requisites

Prerequisite: 6 hours graduate credit in music.

Typically Offered

Fall, Spring, Summer

MUSIC 801 - Introduction to Graduate Study in Music

Credits 2

Library procedures, bibliography, research methods, and practice in preparing scholarly papers.

Note

Required of all graduate students in music.

Repeat for Credit

Y

Requisites

Prerequisite: At least 30 hours of music theory and music history.

Typically Offered

Other

MUSIC 802 - Seminar in Music Theory

Credits 3

Comparison of major theoretical treatises and historical compositional practices; practical application for the

modern musician.

Repeat for Credit

Y

Requisites

Prerequisite: Twenty hours of music theory.

Typically Offered

Other

MUSIC 803 - Seminar in Music History

Credits 2

The history of music with emphasis on the correlation of stylistic factors and man's cultural environment.

Repeat for Credit

Y

Typically Offered

Summer

MUSIC 804 - Advanced Analysis

Credits 3

An in-depth study of works by later Romantic and modern composers: techniques and styles in relation to form.

Repeat for Credit

N

Requisites

Prerequisite: Twenty hours music theory.

Typically Offered

Other

MUSIC 805 - Theories of Music Education

Credits 3

A survey of the history of music teaching in the United States, with emphasis on the relationship of various theories of music, musical perception, and musical cognition to current practices in teaching music at all levels.

Repeat for Credit

N

Typically Offered

Fall-Even Years

MUSIC 806 - Psychology of Music

Credits 3

Acquaints students with musical acoustics, perception and cognition of music, music learning, nature and testing of musical aptitude and achievement, affective response to music, musical preference, and the functionality of music.

Repeat for Credit

N

Typically Offered

Other

MUSIC 807 - History and Philosophy of Music Education

Credits 3

The study of history and philosophy of music education in the U.S.

Repeat for Credit

N

Typically Offered

Spring-Even Years

MUSIC 808 - Research in Music Education

Credits 3

An introduction to historical, descriptive, and experimental research in music education, including a study of techniques for the evaluation of music teaching and learning.

Repeat for Credit

Y

Typically Offered

Fall-Odd Years

MUSIC 809 - Seminar in Music Education

Credits 3

Advanced studies of various topics related to the music.

Repeat for Credit
Y

Typically Offered
Other

MUSIC 810 - Curriculum Development and Learning Assessment

Credits 3

MUSIC 810 focuses on development and implementation of comprehensive music education in K-12 public schools. Attention is given to sequential scaffolding of content within and across developmental levels, measuring student outcomes, and options for dissemination. Among factors studied will be evaluation materials, techniques, and design of reliable and valid measures.

Repeat for Credit
N

Typically Offered
Fall-Odd Years

MUSIC 811 - Symposium in Music

Credits 2

Intensive short-term studies of various topics in music, featuring presentations by nationally known scholars in the field.

Repeat for Credit
Y

Typically Offered
Summer

MUSIC 813 - Improvisation and Composition in Elementary Curriculum

Credits 3

Development of pedagogical practices in the areas of improvisation and composition as appropriate for the elementary music classroom.

Repeat for Credit
N

Typically Offered
Other

MUSIC 814 - World Music Pedagogy, Culturally Relevant Pedagogy, and Special Populations in Music Education

Credits 3

Explores current issues facing music education, including culturally relevant pedagogy, world music pedagogy, special learners in music education, and popular music.

Repeat for Credit
N

Typically Offered
Summer

MUSIC 815 - The Undergraduate Music Curriculum

Credits 1

Provides foundational understanding and developing skills in designing, administering, and assessing learning in an undergraduate music education curriculum. Focuses on preparing future music teacher educators for success in their future profession.

Repeat for Credit
N

Typically Offered
Fall

MUSIC 816 - Field Experiences in an Undergraduate Music Curriculum

Credits 1

Prepares future music education professors to design, administer, and guide undergraduate music education field experiences.

Repeat for Credit
N

Typically Offered
Spring

MUSIC 821 - Piano Pedagogy I

Credits 3

Piano Pedagogy I focuses on how to teach and perform a broad spectrum of intermediate piano repertoire.

Repeat for Credit

N

Typically Offered

Fall

MUSIC 822 - Piano Pedagogy II**Credits 3**

Piano Pedagogy II teaches students how to teach and perform selected advances-level piano repertoire by notable composers for the instrument.

Repeat for Credit

N

Typically Offered

Spring

MUSIC 823 - Supervised Teaching in Piano**Credits 2**

Students will be observed by the instructor and classmates teaching lessons and provide feedback and commentary in a masterclass format.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 824 - Half Recital in Piano**Credits 1**

Students will present a 30 minute recital demonstrating proficiencies as defined by the instructor.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 825 - Lecture Recital in Piano**Credits 1**

Students will present a lecture-recital that will be a musically-illustrated presentation on some aspect of piano pedagogy.

Repeat for Credit

N

Typically Offered

Fall, Spring

MUSIC 828 - Methods and Materials for the Studio**Credits 1-3**

Methods of teaching fundamental techniques; selection of teaching materials outlining courses of study. For graduate students in performance curricula. Taught in divisions according to the major. Practical application through supervised studio teaching.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 830 - Seminar in Medieval and Renaissance Music**Credits 3**

In-depth investigation of a selected area or problem in medieval or Renaissance music. Emphasis on individual research.

Repeat for Credit

Y

Typically Offered

Other

MUSIC 832 - Seminar in Baroque Music**Credits 3**

In-depth investigation of a selected area or problem in Baroque music. Emphasis on individual research.

Repeat for Credit

Y

Typically Offered

Other

MUSIC 834 - Seminar in Classical Music**Credits 3**

In-depth investigation of a selected area or problem in classical music. Emphasis on individual research.

Repeat for Credit

Y

Typically Offered

Other

MUSIC 836 - Seminar in Romantic Music**Credits 3**

In-depth investigation of a selected area or problem in Romantic music. Emphasis on individual research.

Repeat for Credit

Y

Typically Offered

Other

MUSIC 837 - Seminar in 20th-Century Music**Credits 3**

In-depth investigation of a selected area or problem in twentieth-century music. Emphasis on individual research.

Repeat for Credit

Y

Typically Offered

Other

MUSIC 838 - Opera Theatre**Credits 0-18**

Opera workshop for graduates.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 839 - Vocal Ensemble**Credits 0-1**

Performance and study with established University vocal organization or small ensemble.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 840 - Instrumental Ensemble**Credits 0-1**

Performance and study with an established University instrumental organization or a small ensemble.

Note

Students may enroll in more than one instrument simultaneously and may earn 1 to 4 hours per semester in each instrument.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 841 - Collegium Musicum Early Music Ensemble**Credits 0-1**

A vocal and instrumental ensemble devoted to the historically-informed performance of music written primarily during the Medieval, Renaissance, and Baroque periods (c. 1100-1750). Instruments of the historical period used when possible.

Repeat for Credit

Y

Typically Offered

Fall, Spring

MUSIC 842 - Concert Choir

Credits 0-1

Concert Choir

Repeat for Credit
Y

Typically Offered
Fall, Spring

MUSIC 843 - Symphony Orchestra

Credits 0-1

Symphony Orchestra

Repeat for Credit
Y

Typically Offered
Fall, Spring

MUSIC 844 - Concert Jazz Ensemble

Credits 0-1

Concert Jazz Ensemble

Repeat for Credit
Y

Typically Offered
Fall, Spring

MUSIC 845 - Wind Ensemble-Wind Symphony

Credits 0-1

Performing Ensemble for Graduate Instrumentalists.
Audition Required.

Repeat for Credit
Y

Typically Offered
Fall, Spring

MUSIC 846 - Marching Band - Graduate Level

Credits 0-1

Athletic Band Performing at Football Events.

Repeat for Credit
Y

Typically Offered
Fall

MUSIC 847 - Cat Band - Graduate Level

Credits 0-1

Athletic Band Performing at Volleyball and Basketball Events.

Repeat for Credit
Y

Typically Offered
Spring

MUSIC 848 - Concert Band

Credits 0-1

Using a player-pool concept, the ensemble will explore outstanding and varied wind literature. Repertoire may range from a classical octet to a one-on-a-part performance of a major large band work. Admission by audition.

Repeat for Credit
Y

Typically Offered
Fall, Spring

MUSIC 854 - Graduate Secondary Applied Performance

Credits 1-3

For graduate students who wish to study an instrument (or voice) other than the major performance area. Pedagogical methods and fundamentals are stressed.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

MUSIC 855 - Graduate-Level Performance

Credits 1-18

Instruction is offered every semester in voice and each of the following instruments: baritone, bassoon, clarinet, double bass, early winds, flute, french horn, guitar, harpsichord, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, viola da gamba, violin, and violoncello.

Note

Students may enroll in more than one instrument simultaneously and may earn 1 to 4 hours per semester in each instrument.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 857 - Advanced Composition

Credits 1-2

Advanced Composition

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

MUSIC 858 - Advanced Choral Conducting

Credits 1-2

Exercises and techniques to refine the conducting gesture; techniques of noted choral conductors; and score study.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

MUSIC 859 - Advanced Instrumental Conducting

Credits 1-2

Advanced Instrumental Conducting

Repeat for Credit

N

Requisites

Prerequisite: MUSIC 365 and consent of instructor.

Typically Offered

Fall, Spring, Summer

MUSIC 885 - Advanced Diction

Credits 1

Concentrated study of Italian, German, and French diction for singing. Materials are related to work in the voice studio, and concurrent registration in MUSIC 855 is required.

Repeat for Credit

N

Typically Offered

On sufficient demand

MUSIC 898 - Master's Report in Music

Credits 0-18

Independent directed research leading to master's report.

Repeat for Credit

Y

Requisites

Prerequisite: sixteen hours graduate credit in music.

Typically Offered

Fall, Spring, Summer

MUSIC 899 - Research in Music

Credits 1-18

Independent research that may lead to master's thesis.

Repeat for Credit

Y

Requisites

Prerequisite: sixteen hours graduate credit in music.

Typically Offered
Fall, Spring, Summer

NE 350 - Reactor Operations Laboratory

Credits 3

A basic course in reactor operator licensing, nuclear safety, and reactor operations with structured laboratory exercises.

Note
Two hours lecture and one three-hour lab per week.

Repeat for Credit
N

Requisites
Prerequisite: PHYS 214.

Typically Offered
Fall, Spring, Summer

NE 415 - Introduction to Engineering Analysis

Credits 3

Introduction to analytical, statistical, and numerical analysis, including computer programming, as applied to engineering.

Note
Three hours recitation a week.

Repeat for Credit
N

Requisites
Prerequisite: MATH 211 or 221.

Typically Offered
Fall

NE 495 - Elements of Nuclear Engineering

Credits 3

Survey of nuclear engineering concepts and applications. Nuclear reactions, radioactivity, radiation interaction with matter, reactor physics, risk and dose assessment, applications in medicine, industry, agriculture, and research.

Note
Three hours lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: MATH 221, PHYS 213.

Typically Offered
Fall, Spring

K-State 8
Global Issues and Perspectives

NE 497 - Undergraduate Research Experience

Credits 0-3

Open to students pursuing undergraduate research projects.

Repeat for Credit
Y

Typically Offered
Fall, Spring

NE 585 - Nuclear Engineering Design Projects

Credits 3

In-depth application of design principles, engineering analyses, and experimental methods to a nuclear engineering design project addressing design, analysis, constraints, standards, fabrication, and testing.

Note
Majors only

Repeat for Credit
N

Requisites
Prerequisite: ME 574 and NE 690 and NE 612 and NE 630 and NE 650

Typically Offered
Spring

NE 602 - Radiation Transport Simulation and Modeling

Credits 3

Become proficient in solving nuclear radiation transport problems using common Monte Carlo simulation software, including an open-source interface package called TOPAS for the Geant4 toolkit. Obtain capability to simulate shielding problems, dose rate problems, and radiation sensing problems students will encounter in required nuclear engineering courses and in research.

Note

A student may take either NE 602 or NE 802 for credit, but not both.

Repeat for Credit

N

Requisites

Prerequisite: NE495

Typically Offered

Fall

NE 612 - Principles of Radiation Detection**Credits 3**

Operating principles and general properties of devices used in the detection and characterization of ionizing radiation. Fundamental methods of data interpretation and presentation.

Note

Two hours recitation and three hours lab. a week.

Repeat for Credit

N

Requisites

Prerequisite: NE 495.

Typically Offered

Spring

NE 620 - Problems in Nuclear Engineering**Credits 1-18**

Engage the student in theory, design, characterization, and applications of neutron beams from fission reactors.

Note

Consult program director.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

NE 630 - Nuclear Reactor Theory**Credits 3**

Theory of neutron diffusion and thermalization with application to steady-state nuclear reactors.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340, NE 495.

Typically Offered

Fall

NE 635 - Generation IV Reactor Design**Credits 3**

Introduction to the complex field of nuclear reactor design, with emphasis on Gen IV reactor technology. Discussion topics include nuclear power cycles, the nuclear fuel cycle, the reactor design process, and reactor safety. The conceptual design of an advanced nuclear reactor based on a candidate Generation IV technology.

Note

3 hours lecture

Repeat for Credit

N

Requisites

Prerequisite: NE 630.

Typically Offered

Spring

NE 640 - Nuclear Reactor Thermal Hydraulics**Credits 3**

Engineering principles underlying the design and operation of nuclear power plant components and systems. Fundamentals of nuclear energy generation, heat transport, and single- and two-phase flows.

Repeat for Credit

N

Requisites

Prerequisite: NE 495

Corequisite: ME 573

Typically Offered

Spring

NE 648 - Nuclear Reactor Laboratory

Credits 3

Theory and measurement of nuclear and reactor parameters of fundamental importance to nuclear reactors and their operation.

Note

Two hour lecture and three hours lab. a week.

Repeat for Credit

N

Requisites

Prerequisite: NE 612 and NE 630.

Typically Offered

Spring

NE 650 - Nuclear Fuel Cycles

Credits 3

Examines the various aspects of the processing of nuclear fuel including mining, milling, conversion, enrichment, fabrication, irradiation, shipping, reprocessing, and waste disposal. Compares in-core and out-of-core nuclear fuel management. Presents nuclear fuel cycle economics.

Repeat for Credit

N

Requisites

Prerequisite: MATH 340 and NE 415

Typically Offered

Spring

NE 690 - Radiation Protection and Shielding

Credits 3

Basic concepts of radiation protection, doses, associated risks, and exposure limits. Properties of natural and other radiation sources, and evaluation of internal and external doses. Techniques for shield design including ray, point kernel, and transport theories for both neutrons and gamma rays.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: NE 495, PHYS 214, MATH 340.

Typically Offered

Fall

NE 691 - Principles of Radiation and Human Health

Credits 3

Explores characterization of human health effects due to ionizing and nonionizing radiation exposure. Includes radiation health effects; radiation sources; radiation interactions with biological material; computational methods for exposure assessment; limits and safety guidelines; and risk analysis.

Note

A student may take either NE 691 or NE 891 for credit, but not both.

Repeat for Credit

N

Requisites

Prerequisite: ME 400 or CIS 200; NE 690

Typically Offered

Spring-Even Years

NE 730 - Applied Reactor Physics

Credits 3

Principles of reactor physics as used in practice. Topics

include the fundamentals of nuclear data processing, pin- and lattice-level analysis for generation of multigroup constants, and full-core models of nuclear reactors based on multigroup diffusion theory. Throughout, students will use commercial-grade software, including CASMO 4 and SIMULATE 3, to complete computational laboratory assignments.

Repeat for Credit

N

Requisites

Prerequisite: NE 630 and ME 400.

Typically Offered

Spring-Even Years

NE 737 - Intermediate Radiation Measurement Applications

Credits 3

The course will cover physical principles and mathematical modeling of radiation-based measurement systems used in medical and non-medical applications. Topics include measurement principles and inverse methods, radio-gauging, radio-tracing, quantitative analysis methods, imaging with ionizing radiation, and radiation scanning.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: NE 612, NE 690.

Typically Offered

Spring-Odd Years

NE 740 - Nuclear Systems and Design

Credits 3

Principles underlying the design and operation of nuclear systems with emphasis on nuclear power reactors. Energy

generation and removal in heat transfer fluids, reactor and component control systems and nuclear fuel reloading patterns. Design philosophy of existing, advanced and passively safe nuclear reactors will be covered.

Repeat for Credit

N

Requisites

Prerequisite: ME 573.

Typically Offered

Fall

NE 761 - Radiation Measurement Systems

Credits 3

Execute methods and techniques to acquire, process, display, and interpret electrical signals from the most common types of radiation sensors with focus on the complexity of gamma-ray spectroscopy and the sensing applications of detection, localization, and isotope identification.

Note

A student may take either NE 761 or NE 861 for credit, but not both.

Repeat for Credit

N

Requisites

Prerequisite: NE 612.

Typically Offered

Fall-Odd Years

NE 799 - Special Topics in Nuclear Engineering

Credits 0-18

Topical material of importance in nuclear engineering, such as controlled thermonuclear reactions, numerical analysis, Monte Carlo methods in radiation transport, effects of nuclear explosions, etc.

Note

Consent of program director.

Repeat for Credit

Y

Typically Offered

On sufficient demand

NE 802 - Radiation Transport Simulation and Modeling**Credits 3**

Become proficient in solving nuclear radiation transport problems using and developing common Monte Carlo simulation software, including a new interface package called TOPAS for the Geant4 toolkit. Obtain capability to simulate shielding problems, dose rate problems, and radiation sensing problems to support experiments and analysis in research.

Note

A student may take either NE 602 or NE 802 for credit, but not both.

Repeat for Credit

N

Requisites

Grad bypass.

Typically Offered

Fall

NE 806 - Neutronics**Credits 3**

Particle transport, theories of diffusion, numerical analysis of diffusion, transient core analysis.

Note

Three hours recitation a week.

Repeat for Credit

Y

Requisites

Prerequisite: NE 630.

Typically Offered

Fall

NE 810 - Graduate Problems in Nuclear Engineering**Credits 1-18**

Specific studies in advanced problems in various phases of nuclear engineering.

Note

Consent of program director.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing

Typically Offered

Fall, Spring, Summer

NE 851 - Nuclear Engineering Laboratory**Credits 2**

Design of experiments for the TRIGA nuclear reactor.

Note

Six hours lab a week.

Repeat for Credit

Y

Requisites

Prerequisite: NE 630 and NE 648.

Typically Offered

On sufficient demand

NE 860 - Advanced Topics in Nuclear Engineering**Credits 1-18**

A presentation of various special topics covering advanced nuclear engineering specialties.

Note

Consent of program director.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing

Typically Offered
Fall, Spring, Summer

NE 861 - Advanced Radiation Measurement Systems

Credits 3

Execute methods and techniques to acquire, process, display, and interpret electrical signals from the most common types of radiation sensors with focus on the complexity of gamma-ray spectroscopy and the sensing applications of detection, localization, and isotope identification.

Note

A student may take either NE 761 or NE 861 for credit, but not both.

Repeat for Credit

N

Requisites

Prerequisite: NE 612.

Typically Offered

Fall-Odd Years

NE 891 - Advanced Radiation and Human Health

Credits 3

Explores characterization of human health effects due to ionizing and nonionizing radiation exposure. Includes radiation health effects; radiation sources; radiation interactions with biological material; computational methods for exposure assessment; limits and safety guidelines; and risk analysis. Application of state-of-the-art exposure and risk assessment.

Note

A student may take either NE 691 or NE 891 for credit, but not both.

Repeat for Credit

N

Requisites

Prerequisite: ME 400 or CIS 200; NE 690.

Typically Offered

Spring-Even Years

NE 898 - Master's Report

Credits 0-18

Topics selected with approval of major professor and department head.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

NE 899 - Master's Thesis

Credits 1-18

Topics selected with approval of major professor and program director.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

NE 998 - Selected Advanced Topics in Nuclear Engineering

Credits 0-18

Current topics of interest in nuclear engineering at an advanced level, such as controlled thermonuclear reactions, numerical analysis, Monte Carlo methods in radiation transport, etc.

Note

Consent of program director.

Repeat for Credit

Y

Typically Offered

Spring

NE 999 - Dissertation Research

Credits 1-18

Topics selected with approval of major professor and program director.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PAS 700 - Applied Anatomy and Physiology I**Credits 4**

Intensive study of human anatomy and physiology with clinical application of medical terminology. Designed to develop the PA student's working knowledge and understanding of the general structures and functional principles of the human body. Clinically relevant areas of radiographic imaging, surface anatomy, and clinical case correlations are integrated in course. Students will acquire anatomic knowledge with clinical application through cadaveric laboratory experience to include human and/or virtual dissection. Develops a strong foundation for the study of pathophysiology and disease states.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA Program

Typically Offered

Spring

PAS 710 - PA Profession**Credits 1**

Explores the history of the Physician Assistant (PA) profession, the role of the PA in today's health care system, and the factors affecting the PA. Designed to aid the student's transition into the medical profession, and serve as an introduction to multiple professional practice issues.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Spring

PAS 711 - Applied Anatomy and Physiology

II

Credits 4

The second of two intensive human anatomy and physiology courses. Designed to develop the PA student's working knowledge and understanding of the human body's general structures and functional principles. Clinically relevant areas of radiographic imaging, surface anatomy, and clinical case correlations are integrated. Students will acquire anatomic knowledge with clinical application through the virtual dissection experience. Develops a strong foundation for the study of pathophysiology and disease states.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA Program and PAS 700

Typically Offered

Summer

PAS 720 - Evidence Based Medicine**Credits 1**

Intensive study in evidence based medicine and critical thinking about the information and evidence needed to produce clinical decisions. The student will be prepared to cope with the vast amount of medical literature produced every year. The course is structured to equip the student to effectively evaluate medical literature, and apply the information acquired to clinical decision making in the provision of individualized patient care.

Note

Intended for Master of Science in Physician Assistant Studies (MPAS) program or Athletic Training M.S. (MATHR) program students.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the Master of Science in Physician Assistant Studies (MPAS) program or Athletic Training (M.S.) (MATHR) program.

Typically Offered

Fall

PAS 721 - Medical Genetics

Credits 1

Will review the basic principles of medical genetics and its application to clinical practice. Students will learn to obtain a detailed family history, and assess possible modes of inheritance. This involves the ability to understand the medical genetics literature, as well as the clinical application of genetic knowledge in the care of individual patients. Ethical principles related to genetic evaluation, testing, and diagnosis will be discussed. The underlying etiology, clinical presentation, evaluation, diagnosis, prognosis, and treatment options of specific genetic disorders will be reviewed.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Summer

PAS 722 - Clinical Geriatrics**Credits 2**

Designed to provide an overview of the aging population and age-related disorders, and correlates theory and clinical practice in providing care to the geriatric population. The adjustment of older adults to degenerative changes, nursing home placement, and alternatives to placement in long term care facilities are discussed. Concepts relevant to pathophysiology, nutrition, pharmacology, psychosocial development, and ethical/legal responsibilities are emphasized using an evidence-based and functional approach.

Repeat for Credit

N

Requisites

Prerequisite: PAS 780.

Typically Offered

Fall

PAS 731 - Clinical Pediatrics**Credits 2**

Course introduces the PA student to pediatric medicine. Focuses on the physiological and psychological

fundamentals of child development, major common pediatric illnesses, various immunizations and medications used in pediatrics, pediatric emergencies, and the management of both healthy and ill infants, children and adolescents.

Repeat for Credit

N

Requisites

Prerequisite: PAS 780.

Typically Offered

Summer

PAS 732 - Psychiatry & Behavioral Medicine**Credits 2**

Course will present an introduction to the neurobiological, psychobiological, emotional, social, and cultural influences on mental health and illness of diverse patient populations with acute and chronic conditions across the lifespan, including end-of-life care, and will integrate human physical and psychological development, human sexuality, and responses to stress, injury, illness and death. Also incorporated is the training in substance use, abuse, addiction, and treatment adherence issues. Principles of violence identification and prevention will be examined, and basic counseling skills and instruments for the evaluation and management of psychiatric disorders will be presented.

Repeat for Credit

N

Requisites

Prerequisite: PAS 780.

Typically Offered

Fall

PAS 740 - Clinical Procedures I**Credits 2**

Designed to allow students to become competent in a variety of patient care skills. Skills are sequenced to the body systems being covered in the physical diagnosis course. Allows students to safely apply the medical-decision making process, and learn the procedural skills in a simulated environment. Course will utilize simulators, task trainers and standardized patient experiences.

Repeat for Credit

N

Requisites

Prerequisite: Admission to PA program.

Typically Offered

Spring

PAS 741 - Clinical Procedures II**Credits 2**

Designed to allow students to become competent in a variety of patient care skills. Skills are sequenced to the body systems being covered in the physical diagnosis course. Allows students to safely apply the medical-decision making process, and learn the procedural skills in a simulated environment. Course will utilize simulators, task trainers and standardized patient experiences.

Repeat for Credit

N

Requisites

Prerequisite: PAS 740.

Typically Offered

Summer

PAS 742 - Clinical Procedures III**Credits 2**

Designed to allow students to become competent in a variety of patient care skills. Skills are sequenced to the body systems being covered in the physical diagnosis course. Allows students to safely apply the medical-decision making process, and learn the procedural skills in a simulated environment. Course will utilize simulators, task trainers and standardized patient experiences.

Repeat for Credit

N

Requisites

Prerequisite: PAS 741.

Typically Offered

Fall

PAS 750 - Physical Diagnosis I**Credits 2**

Designed to provide training on the skills and competencies necessary for obtaining a patient's medical history, and performing a physical examination. Includes an approach to patient interviewing, acquiring clinical information, organizing and processing this information, and presenting it in a clear and concise manner. This will be achieved by learning examination techniques through lectures, small group settings, faculty mentoring, practicum examinations, and select body system specialty exams.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Spring

PAS 751 - Physical Diagnosis II**Credits 2**

Designed to provide training on the skills and competencies necessary for obtaining a patient's medical history, and performing a physical examination. Includes an approach to patient interviewing, acquiring clinical information, organizing and processing this information, and presenting it in a clear and concise manner. This will be achieved by learning examination techniques through lectures, small group settings, faculty mentoring, practicum examinations, and select body system specialty exams.

Repeat for Credit

N

Requisites

Prerequisite: PAS 750.

Typically Offered

Summer

PAS 752 - Physical Diagnosis III**Credits 2**

Designed to provide training on the skills and competencies necessary for obtaining a patient's medical history, and performing a physical examination. Includes an approach to patient interviewing, acquiring clinical information, organizing and processing this information, and presenting

it in a clear and concise manner. This will be achieved by learning examination techniques through lectures, small group settings, faculty mentoring, practicum examinations, and select body system specialty exams.

Repeat for Credit

N

Requisites

Prerequisite: PAS 751.

Typically Offered

Fall

PAS 760 - Diagnostics I - Laboratory

Credits 2

First of a three-part series designed to introduce the student to clinical diagnostics in medicine. Presents a foundation for understanding the appropriate use and interpretation of diagnostic testing. Various diagnostic tests will be reviewed to allow the student to differentiate normal from abnormal values, and provide the basis for selection, utilization, and interpretation of the tests used to evaluate principal functions of body systems, and their correlation to clinical conditions.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Spring

PAS 761 - Diagnostics II - EKG

Credits 2

Second of a three-part series designed to introduce the student to clinical diagnostics in medicine. Presents a foundation for understanding the appropriate use and interpretation of diagnostic testing. Various diagnostic tests will be reviewed to allow the student to differentiate normal from abnormal values, and provide the basis for selection, utilization, and interpretation of the tests used to evaluate principal functions of body systems, and their correlation to clinical conditions.

Repeat for Credit

N

Requisites

Prerequisite: PAS 760.

Typically Offered

Summer

PAS 762 - Diagnostics III- Radiology

Credits 2

Third of a three-part series designed to introduce the student to clinical diagnostics in medicine. Presents a foundation for understanding the appropriate use and interpretation of diagnostic testing. Various diagnostic tests will be reviewed to allow the student to differentiate normal from abnormal values, and provide the basis for selection, utilization, and interpretation of the tests used to evaluate principal functions of body systems, and their correlation to clinical conditions.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Fall

PAS 770 - Applied Pathophysiology I

Credits 2

Designed to develop the PA student's working knowledge and comprehensive understanding of the pathophysiological principles of the human body. An intensive study of pathology of the human body, which explores the etiology of organic and systemic disease, providing an insight into the disordered physiological changes resulting from specific disease processes. Provides the necessary linkage between the basic sciences and the clinical presentation of disease states.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Spring

PAS 771 - Applied Pathophysiology II

Credits 2

Designed to develop the PA student's working knowledge and comprehensive understanding of the pathophysiological principles of the human body. An intensive study of pathology of the human body, which explores the etiology of organic and systemic disease, providing an insight into the disordered physiological changes resulting from specific disease processes. Provides the necessary linkage between the basic sciences and the clinical presentation of disease states.

Repeat for Credit

N

Requisites

Prerequisite: PAS 770.

Typically Offered

Summer

PAS 772 - Applied Pathophysiology III

Credits 2

Designed to develop the PA student's working knowledge and comprehensive understanding of the pathophysiological principles of the human body. An intensive study of pathology of the human body, which explores the etiology of organic and systemic disease, providing an insight into the disordered physiological changes resulting from specific disease processes. Provides the necessary linkage between the basic sciences and the clinical presentation of disease states.

Repeat for Credit

N

Requisites

Prerequisite: PAS 771.

Typically Offered

Fall

PAS 780 - Clinical Medicine I

Credits 6

The first in a series of three courses designed to guide the development of problem-solving skills in the medical decision-making process. This course uses a body systems

approach to thoroughly study diseases/disorders encountered in primary care practice. Medical knowledge includes the epidemiology, etiology, pathophysiology, clinical manifestations, diagnosis, management and patient education of diseases/disorders. Instruction includes providing care to preventive, emergent, acute, chronic, adolescent, adult, and elderly populations as it applies to disease processes. Instruction will consist of lectures, problem/case-based learning, and small group collaboration.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA Program

Typically Offered

Spring

PAS 781 - Clinical Medicine II

Credits 6

The second in a series of three courses designed to guide the development of problem-solving skills in the medical decision-making process. This course uses a body systems approach to thoroughly study diseases/disorders encountered in primary care practice. Medical knowledge includes the epidemiology, etiology, pathophysiology, clinical manifestations, diagnosis, management and patient education of diseases/disorders. Instruction includes providing care to preventive, emergent, acute, chronic, adolescent, adult, and elderly populations as it applies to disease processes. Instruction will consist of lectures, problem/case-based learning, and small group collaboration.

Repeat for Credit

N

Requisites

Prerequisite: PAS 780, Clinical Medicine I

Typically Offered

Summer

PAS 782 - Clinical Medicine III

Credits 7

The third in a series of three courses designed to guide the development of problem-solving skills in the medical

decision-making process. This course uses a body systems approach to thoroughly study diseases/disorders encountered in primary care practice. Medical knowledge includes the epidemiology, etiology, pathophysiology, clinical manifestations, diagnosis, management and patient education of diseases/disorders. Instruction includes providing care to preventive, emergent, acute, chronic, adolescent, adult, and elderly populations as it applies to disease processes. Instruction will consist of lectures, problem/case-based learning, and small group collaboration.

Repeat for Credit

N

Requisites

Prerequisite: PAS 781, Clinical Medicine II

Typically Offered

Fall

PAS 790 - Pharmacology I**Credits 2**

Designed as a survey of pharmacology, course emphasizes the fundamentals of drug absorption, distribution, metabolism, and elimination. Course focuses on the relationship between drugs and receptors, adverse drug reactions, toxicity, and drug indications and contraindications. Utilizing evidence-based medicine, pharmacotherapeutics with application to patient care is also incorporated.

Repeat for Credit

N

Requisites

Prerequisite: Admission to the PA program.

Typically Offered

Spring

PAS 791 - Pharmacology II**Credits 2**

Designed as a survey of pharmacology, course emphasizes the fundamentals of drug absorption, distribution, metabolism, and elimination. Course focuses on the relationship between drugs and receptors, adverse drug reactions, toxicity, and drug indications and contraindications. Utilizing evidence-based medicine,

pharmacotherapeutics with application to patient care is also incorporated.

Repeat for Credit

N

Requisites

Prerequisite: PAS 790.

Typically Offered

Summer

PAS 792 - Pharmacology III**Credits 2**

Designed as a survey of pharmacology, course emphasizes the fundamentals of drug absorption, distribution, metabolism, and elimination. Course focuses on the relationship between drugs and receptors, adverse drug reactions, toxicity, and drug indications and contraindications. Utilizing evidence-based medicine, pharmacotherapeutics with application to patient care is also incorporated.

Repeat for Credit

N

Requisites

Prerequisite: PAS 791.

Typically Offered

Fall

PAS 800 - Family Medicine I - SCPE**Credits 4**

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision-making process while developing the appropriate knowledge, skills, and abilities to provide care in the ambulatory outpatient family medicine clinic. The course will deliver education on providing comprehensive evidence-based, gender/age specific individualized care, addressing acute and chronic diseases, health promotion and disease prevention in the context of each patient's social, economic, cultural and religious background. Students will engage with the interprofessional team, and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Spring

PAS 810 - Family Medicine II - SCPE**Credits 4**

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision-making process while developing the appropriate knowledge, skills, and abilities to provide care in the ambulatory outpatient family medicine clinic. The course will deliver education on providing comprehensive evidence-based, gender/age specific individualized care, addressing acute and chronic diseases, health promotion and disease prevention in the context of each patient's social, economic, cultural and religious background. Students will engage with the interprofessional team, and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 820 - Internal Medicine - SCPE**Credits 4**

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision making process while developing the appropriate knowledge, skills and abilities to provide care in the in/outpatient internal medicine practice. Students will encounter a full range of experiences to include, preventative care, acute and chronic illness, and palliative/end of life care in the context of each patient's social, economic, cultural and religious background. Students will have the opportunity to work as part of the primary team while coordinating with subspecialist, and interdisciplinary allied health professionals.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 830 - Emergency Medicine - SCPE**Credits 4**

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision making process while developing the appropriate knowledge, skills and abilities to provide care in the emergency medicine practice. The rotation will take place in emergency departments. This rotation allows students to establish triage skills, learn to recognize and manage conditions that need immediate attention and prioritize care for conditions that are less urgent. Students will engage with the interprofessional team and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 840 - Pediatric Medicine - SCPE**Credits 4**

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision making process while developing the appropriate knowledge, skills and abilities to provide care in a pediatric medicine practice. The course provides education in comprehensive, evidence-based, gender/age specific individualized care, addressing acute and chronic diseases (sick child), health promotion (well child) and disease prevention in the context of each patient's social, economic, cultural and religious background. Students will engage with the interprofessional team and behave as a medical

professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 850 - Surgery - SCPE

Credits 4

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision making process while developing the appropriate knowledge, skills and abilities to provide care in the surgical practice. The experiences in this rotation will include pre-operative, intra-operative (assisting) and post-operative surgical care. Students will engage with the interprofessional team and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

Y

Requisites

Successful completion of the PA program's clinical orientation and didactic phase (C or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 860 - Behavioral Medicine - SCPE

Credits 4

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision making process while developing appropriate knowledge, skills and abilities to recognize and provide care for various behavioral/mental health problems. In settings such as in/outpatient behavioral/mental health facilities and multiservice centers, students will participate in behavioral/mental health evaluations, observe behavioral/mental therapy/interventions, and discuss management plans. Emphasis is on applying skills learned

to treatment of behavioral/mental health issues in primary care. Students will engage with the interprofessional team, and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 870 - Women's Health - SCPE

Credits 4

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision making process while developing the appropriate knowledge, skills and abilities to provide care in a women's health medicine practice. Experiences include prenatal care, obstetric/gynecologic health histories, OB/GYN exams, evaluation and management planning. Emphasis is on applying skills learned to the treatment of OB/GYN health issues in primary care in the context of each patient's social, economic, cultural and religious background. Students will engage with the interprofessional team and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 890 - Geriatric Medicine - SCPE

Credits 4

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision-making process while developing the appropriate knowledge, skills, and abilities to provide care to the geriatric population. Students will be exposed to a variety of experiences including ambulatory practice, nursing

facilities, assisted living centers, and hospice. The course will deliver education on providing comprehensive evidence-based, geriatric specific individualized care, addressing acute and chronic conditions, health promotion and disease prevention in the context of the elderly patient's social, economic, cultural and religious background. Students will engage with the interprofessional team and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 891 - Orthopedics - SCPE

Credits 4

A supervised clinical practice experience designed to give students the opportunity to participate in the medical decision-making process while developing the appropriate knowledge, skills, and abilities to provide care in orthopedics. The course will deliver education on providing comprehensive evidence-based, gender/age specific individualized care, addressing acute and chronic musculoskeletal conditions with and without surgical intervention, health promotion and disease prevention in the context of each patient's social, economic, cultural and religious background. Students will engage with the interprofessional team and behave as a medical professional with patients, families and other members of the medical team.

Repeat for Credit

N

Requisites

Successful completion of clinical orientation and didactic phase of the PA program (B or better in PAS 700-792).

Typically Offered

Fall, Spring, Summer

PAS 892 - Elective Experience I

Credits 4

A supervised clinical practice experience selected by the student designed to give students the opportunity to develop appropriate knowledge, skills, and abilities in patient care, medical knowledge, practice based learning, communication, professionalism, interprofessional collaboration, system based practice and/or professional development. Options for students to achieve this include but are not limited to, additional experience in a required rotation; medical discipline of interest not encountered in the previous rotations; public health service; administration; and health policy.

Repeat for Credit

N

Requisites

Successful completion of all prior clinical rotations (B or better in PAS 800-891).

Typically Offered

Spring

PAS 895 - Summative

Credits 2

Designed to prepare students for the final transition from student to medical provider. Didactic and clinical year grades, preceptor evaluations, and assignments specific to the Summative assessment will be reviewed to ascertain the student's ability to function as a successful graduate Physician Assistant. Physician Assistant practice topics will be covered, including certifying examination review, certification process, professional licensure, malpractice, professional career planning, contract negotiations, credentialing process and financial planning. Content will be delivered in lecture, lab and small groups.

Repeat for Credit

N

Requisites

Successful completion of Clinical Year Rotations (B or better is PAS 800-892).

Typically Offered

Spring

PAV 101 - Private Pilot

Credits 5

Awards academic credit for the Federal Aviation

Administration Private Pilot certificate.

Note

This may be used as a substitute for PPIL 111 and 113 for the purpose of awarding academic credit for ratings earned elsewhere. This course may not be used to fulfill the requirements for Reduced ATP as outlined in the FAA-KSU LOA.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 102 - Instrument Pilot

Credits 4

This course is offered to give academic credit for the Federal Aviation Administration Instrument Pilot rating.

Note

This may be used as a substitute for PPIL 112 and 114 for the purpose of awarding academic credit for ratings earned elsewhere. This course may not be used to fulfill the requirements for Reduced ATP as outlined in the FAA-KSU LOA.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 201 - Commercial Pilot

Credits 7

This course is offered to give academic credit for the Federal Aviation Administration Commercial Pilot certificate.

Note

This may be used as a substitute for PPIL 211, 212, and 213 for the purpose of awarding academic credit for ratings earned elsewhere. This course may not be used to fulfill the requirements for Reduced ATP as outlined in the FAA-KSU LOA.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 202 - Additional Aircraft Category, Class, and/or Type Rating

Credits 1-5

This course is offered to give academic credit for the Federal Aviation Administration additional aircraft category, class and/or type ratings. Credit will be given for one type rating only.

Note

This may not be used as a substitute for PPIL 262 and PPIL 263 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 217 - Airframe A

Credits 9

This course is offered to give partial academic credit for the Federal Aviation Administration Airframe certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 318

Typically Offered

Fall, Spring, Summer

PAV 227 - Powerplant A

Credits 9

This course is offered to give partial academic credit for the Federal Aviation Administration Powerplant certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 328

Typically Offered

Fall, Spring, Summer

PAV 301 - Instructor Pilot

Credits 8

This course is offered to give academic credit for the Federal Aviation Administration Flight Instructor certificate.

Note

This may not be used as a substitute for PPIL 310, PPIL 311, PPIL 312 or PPIL 314 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 302 - Airline Transport Pilot

Credits 2

This course is offered to give academic credit for the Federal Aviation Administration Airline Transport Pilot certificate.

Note

This may not be used as a substitute for PPIL 385 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 318 - Airframe B

Credits 6

This course is offered to give partial academic credit for the Federal Aviation Administration Airframe certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 217

Typically Offered

Fall, Spring, Summer

PAV 328 - Powerplant B

Credits 6

This course is offered to give partial academic credit for the Federal Aviation Administration Powerplant certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 227

Typically Offered

Fall, Spring, Summer

PAV 401 - Additional Flight Instructor Ratings**Credits 1-4**

This course is offered to give academic credit for the Federal Aviation Administration Instrument Flight Instructor certificate.

Note

This may not be used as a substitute for PPIL 482, PPIL 483, PPIL 492, or PPIL 493 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 497 - Senior Capstone**Credits 3**

This is a culminating experience for the Professional Aviation option. Students will integrate the intellectual, creative, and expressive skills/knowledge they have cultivated in their undergraduate curriculum. Additionally, students will combine discipline-specific knowledge with communication and inquiry methods to solve problems and communicate mastery of their respective area of interest.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor consent.

Typically Offered

Fall, Spring

PFP 101 - Money 101**Credits 1**

This course provides an introduction to resources and tools available to assist students in developing beginning personal finance skills that will assist them throughout their lifetime. Application exercises will allow students to apply personal finance knowledge in solving real-life problems.

Note

This course has an online format.

Repeat for Credit

N

Typically Offered

Fall, Spring

PFP 105 - Introduction to Personal Financial Planning**Credits 3**

Fundamental principles for making financial decisions. Analysis and evaluation of personal and family money management strategies.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PFP 300 - Problems in Personal Financial Planning

Credits 0-3

Relevant topics in personal financial planning will be explored in a small group setting.

Repeat for Credit

Y

Typically Offered

On sufficient demand

PFP 305 - Advanced Personal Financial Planning**Credits 3**

In-depth applications of personal and family money management principles with emphasis on credit, savings, insurance, and budgeting.

Repeat for Credit

N

Requisites

Prerequisite: PFP 105 with grade of "B" or better or FINAN 450.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PFP 315 - Love and Money**Credits 3**

Explores the connection between money and relationships. Understand the factors that influence how individuals, couples, and families perceive and manage money. Become familiar with current literature and research in this area. Gain insight into their own relationship with money and how it influences their relationships in order to enhance their ability to help and work with others experiencing financial difficulties.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PFP 320 - Applied Behavioral Finance**Credits 3**

Introductory exploration of the field of behavioral finance and its relationship to personal and financial decision-making.

Repeat for Credit

N

Typically Offered

Spring

PFP 456 - Financial Counseling and Communication**Credits 3**

This course provides an introduction to the interactive process between the client and the practitioner, including communication techniques, motivation and esteem building, the counseling environment, ethics, and methods of data intake, verification, and analysis. Other topics include legal issues, compensation, uses of technology to identify resources, information management, and current or emerging issues.

Repeat for Credit

N

Typically Offered

Fall

PFP 460 - Retirement Planning Concepts**Credits 3**

This course surveys various types of retirement plans, ethical considerations in providing retirement planning services, assessing and forecasting financial needs in retirement, and integration of retirement plans with government benefits.

Repeat for Credit

N

Requisites

Prerequisite: PFP 305 or FINAN 450 with a grade of "C" or better

Typically Offered

Fall, Spring

PFP 462 - Personal Investment Concepts I

Credits 3

An in-depth study of investment options for clients, this course will include common stocks, fixed income securities, convertible securities, and related choices. Relationships between investment options and employee/employer benefit plan choice will be studied. Current and emerging issues, and ethics will be an integral part of the course.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450 or Corequisite: PFP 305

Typically Offered

Fall

PFP 464 - Estate Planning Concepts

Credits 3

This course provides an introduction to fundamentals of the estate planning process. Includes property transfer, tax consequences, probate avoidance, powers of appointment, and various tools/techniques used in implementing an effective estate plan.

Repeat for Credit

N

Requisites

Prerequisite: PFP 305 or FINAN 450 with a grade of "C" or better.

Typically Offered

Spring

PFP 466 - Personal Risk Management and Insurance Planning

Credits 3

This course provides an analysis of risk management concepts, tools, and strategies for individuals and families, including: life insurance; property and casualty insurance; liability insurance; accident, disability, health, and long-term care insurance; and government-subsidized programs.

Repeat for Credit

N

Requisites

Prerequisite: FINAN 450 or Corequisite: PFP 305.

Typically Offered

Fall, Spring

PFP 468 - Professional Practice Management in PFP

Credits 1

Issues and solutions for challenges of managing family financial planning practices.

Repeat for Credit

N

Requisites

Corequisite: PFP 105 or PFP 305

Typically Offered

Spring

PFP 472 - Personal Income Tax Concepts

Credits 3

This course provides an introduction to personal income tax practices and procedures including tax regulations, tax return preparation, the tax audit process, the appeals process, preparation for an administrative or judicial forum, and ethical considerations of taxation. New and emerging issues related to taxation will be covered. Family/individual case studies provide practice in applying and analyzing tax information and recommending appropriate tax strategies.

Repeat for Credit

N

Requisites

Co-requisite: PFP 305.

Typically Offered

Fall, Summer

PFP 482 - Personal Investment Concepts II

Credits 3

This course is designed to build off of PFP 462 (Personal Investment Concepts I) and to help students develop a

better understanding of the available tools and procedures of investment planning for family and individual goal attainment. Lectures, reading, case studies, and problem sets are designed to help students in preparing for the Investment Planning section of the Certified Financial Planner™ examination.

Repeat for Credit

N

Requisites

Prerequisite: PFP 462

Typically Offered

Spring

PFP 579 - Pre-Internship Orientation in Personal Financial Planning

Credits 1

Consideration and application of professional knowledge and skills necessary for selection and placement in a financial planning firm for a supervised experience.

Repeat for Credit

N

Typically Offered

Fall

PFP 580 - Internship in Personal Financial Planning

Credits 3

Internship experience in personal financial planning or an allied field.

Repeat for Credit

N

Typically Offered

Summer

PFP 595 - Capstone in Personal Financial Planning

Credits 3

Examination of professional issues in personal financial planning, including ethical considerations, regulation and

certification requirements, communication skills, and professional responsibility. Development of skills needed for personal financial planners working with families in meeting their financial needs.

Repeat for Credit

N

Requisites

Prerequisite: PFP 305, PFP 460, PFP 462, PFP 466, PFP 472 Co-requisite: PFP 464, PFP 482.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PFP 624 - Fundamentals of Family Financial Planning

Credits 3

This course provides an overview of family financial planning by integrating concepts and issues with planning and counseling applications. Students will be introduced to the key concepts of family financial planning, including: insurance, tax, investments, retirement, and estate planning. The family financial planning process is introduced with an emphasis on the integration and application of concepts in meeting individual and family financial goals and objectives. Other topics presented include an ethics overview, compensation trends within the industry, and regulatory frameworks.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PFP 675 - Field Study in Family Economics

Credits 1-3

Supervised experiences in financial planning, financial counseling, community action, or consumer services.

Note

Consent of School required

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PFP 756 - Financial Counseling**Credits 3**

Theory and research regarding the interactive process between the client and the practitioner, including communication techniques, motivation and esteem building, the counseling environment, ethics, and methods of data intake, verification, and analysis. Other topics include legal issues, compensation, uses of technology to identify resources, information management, and current or emerging issues.

Repeat for Credit

N

Requisites

Prerequisite:KSU cumulative GPA of 2.5 or higher.

Typically Offered

Fall

PFP 760 - Retirement Planning for Families**Credits 3**

Study of micro and macro considerations for retirement planning. Survey of various types of retirement plans, ethical considerations in providing retirement planning services, assessing and forecasting financial needs in retirement, and integration of retirement plans with government benefits.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 305 or FINAN 450 with a grade of "B" or better and KSU cumulative GPA of 2.5 or higher.

Typically Offered

Fall

PFP 762 - Investing for the Family's Future I**Credits 3**

An in-depth study of investment options for clients, this course will include common stocks, fixed income securities, convertible securities, and related choices. Relationships between investment options and employee/employer benefit plan choice will be studied. Current and emerging issues, and ethics will be an integral part of the course.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 305 or FINAN 450 with a grade of "B" or better and KSU cumulative GPA of 2.5 or higher.

Typically Offered

Spring

PFP 764 - Estate Planning for Families**Credits 3**

Introduction to fundamentals of the estate planning process. Includes property transfer, tax consequences, probate avoidance, powers of appointment, and various tools/techniques used in implementing an effective estate plan.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 305 or FINAN 450 with a grade of "B" or better and KSU cumulative GPA of 2.5 or higher.

Typically Offered

Spring

PFP 766 - Insurance Planning for Families**Credits 3**

An in-depth study of risk management concepts, tools, and strategies for individuals and families, including: life insurance; property and casualty insurance; liability insurance; accident, disability, health, and long-term care insurance; and government-subsidized programs. Current and emerging issues, as well as ethical considerations, relative to risk management will be discussed. Case studies will provide experience in selecting insurance products suitable for individuals and families.

Repeat for Credit

N

Requisites

Prerequisite: HDFS 305 or FINAN 450 with a grade of "B" or better and KSU cumulative GPA of 2.5 or higher.

Typically Offered

Fall

PFP 768 - Introduction to Financial Therapy**Credits 3**

An applied financial psychology course that examines the intersection of financial planning, coaching, and therapy; the psychology of investing; money disorders frequently seen by financial professionals; advanced techniques to establish rapport; helping clients change problematic/destructive money-related behaviors; dealing with client resistance to change; working with couples and families; and integrating financial psychology tools into personal financial planning.

Repeat for Credit

N

Typically Offered

Fall, Spring

PFP 769 - Money and Relationships**Credits 3**

This course will explore the connection between money and couple and family relationships. The objective of the course is to understand the factors that impact how individuals, couples, and families perceive and manage money. Students will gain in-depth knowledge of current literature, research, and theory in this area. Students will gain personal insight into their own relationship with money and how it impacts their relationships in order to enhance their ability to help and work with others to improve financial well-being.

Repeat for Credit

N

Typically Offered

Fall, Spring

PFP 770 - Applied Behavioral Finance**Credits 3**

This course is an applied behavioral finance course that examines the intersection of behavioral finance and financial planning. It reviews the research on behavioral finance, neuroeconomics, and investor psychology, exploring the effects of human emotions and cognitive errors on financial decisions and the financial planning process. This course focuses on the application of behavioral finance theory and research to the practice of personal financial planning to help financial planners improve the financial health of their clients.

Repeat for Credit

N

Typically Offered

Spring, Summer

PFP 771 - Financial Therapy Theory & Research**Credits 3**

Survey of financial therapy and planning literature, conceptual models, and empirical research. Students will be expected to read empirical research related to financial therapy and write a short report on their findings on a weekly basis.

Repeat for Credit

N

Typically Offered

Fall, Spring

PFP 772 - Personal Income Taxation**Credits 3**

This course provides in-depth information of income tax practices and procedures including tax regulations, tax return preparation, the tax audit process, the appeals process, preparation for an administrative or judicial forum, and ethical considerations of taxation. New and emerging issues related to taxation will be covered. Family/individual case studies provide practice in applying and analyzing tax information and recommending appropriate tax strategies.

Repeat for Credit

N

Requisites

Prerequisite: KSU cumulative GPA of 2.5 or higher.
Corequisite: HDFS 305.

Typically Offered
Summer

PFP 782 - Investing for the Family's Future II

Credits 3

The focus of this course is to develop a better understanding of the available tools and procedures of investment planning for family and individual goal attainment. Lectures, readings, case studies, and problem sets are designed to help students in preparing for the Investment Planning section of the Certified Financial Planner™ examination.

Repeat for Credit
N

Requisites
Prerequisite: PFP 762.

Typically Offered
Spring

PFP 802 - Theories and Research in Family Financial Planning II

Credits 3

Macroeconomic theory as it relates to family resource allocation decisions. Advanced theories of household economic behavior including the life cycle hypothesis, behavioral economics, behavioral finance, theories of behavioral change, and psychological theories of subjective economic well-being. Focus on empirical research investigating household financial decision-making.

Repeat for Credit
N

Requisites
Prerequisite: PFP 702

Typically Offered
Fall, Summer

PFP 805 - Statistical Software Applications in Personal Financial Planning

Credits 3

Exposure to and practice in using statistical software to investigate Personal Financial Planning relevant data sets.

Repeat for Credit
N

Requisites
Corequisite: STAT 705.

Typically Offered
Other

PFP 806 - Statistical Methods in Personal Financial Planning I

Credits 3

The course covers applied regression models that are common in personal financial planning research with focus on categorical outcomes. Regression models covered include binomial, multinomial, and ordinal logit and probit models. Particular emphasis is on applying these models in national datasets (e.g., Survey of Consumer Finances) commonly used in financial planning related research and on the interpretation of results.

Repeat for Credit
N

Requisites
Prerequisite: PFP 805

Typically Offered
Fall

PFP 808 - Research Application in Personal Financial Planning

Credits 3

In-depth applications of personal and family money management principles with emphasis on credit, savings, insurance, and budgeting.

Repeat for Credit
Y

Typically Offered
On sufficient demand

PFP 825 - Survey of Personal Financial Planning Research and Theory

Credits 3

This course is a survey of current personal finance and family resource management literature designed to provide an overview of current consumer finance research from multiple perspectives. The course also provides an introduction to doctoral studies in Personal Financial Planning at Kansas State University.

Repeat for Credit

N

Typically Offered

Spring, Summer

PFP 835 - Professional Practice Management in Personal Financial Planning

Credits 3

Challenges of managing personal financial planning practices including, business valuation, personnel, marketing, client services, ethics and technological applications. Relying both on theoretical and applied approach, students analyze case studies that provide relevant, practical exposure to practice management issues, with a strong emphasis on current research findings.

Repeat for Credit

Y

Typically Offered

Fall

PFP 836 - Financial Planning Case Studies

Credits 3

This course examines professional issues in financial planning, including ethical considerations, regulation and certification requirements, communication skills, and professional responsibility. Students are expected to utilize skills obtained in other courses and work experiences in the completion of personal finance case studies, the development of a targeted investment policy, and other related financial planning assignments.

Repeat for Credit

Y

Typically Offered

Fall, Spring

PFP 860 - Advanced Retirement Planning Issues

Credits 3

Advanced study of micro and macro considerations for retirement planning and its inter-relationship with estate planning objectives, comprehensive assessment of peer-reviewed journal resources and models for forecasting retirement needs; survey of and detailed techniques for implementing various types of retirement plans; integration of retirement plans with marital matters, Social Security benefits, and tax aspects.

Repeat for Credit

N

Requisites

Prerequisite: PFP 460, PFP 760 or equivalent.

Typically Offered

Spring

PFP 863 - Advanced Personal Income Tax Planning

Credits 3

Explores the complex issues of personal income tax planning and working with individuals with advanced tax situations in business and family income as well as trusts and estates.

Repeat for Credit

N

Typically Offered

Fall

PFP 864 - Advanced Estate Planning Issues

Credits 3

Advanced study of the principles and concepts of estate planning. Topics of discussion will include the advantages, disadvantages, consequences, and risks of lifetime transfers versus transfers at death; minimization of gift and estate taxes through legal means; intergenerational wealth transfers and the impact on families; intrafamily and

business succession techniques; planning for nontraditional or special needs clients; and recent case law updates on family limited partnerships and various trusts used in estate planning.

Repeat for Credit

N

Requisites

Prerequisite: PFP 464, PFP 764, or equivalent.

Typically Offered

Spring

PFP 888 - Research Methods in Personal Financial Planning I

Credits 3

Study and application of social science methodology for research in personal financial planning graduate programs and professional careers.

Repeat for Credit

N

Typically Offered

Fall, Spring

PFP 889 - Theories and Models in Personal Financial Planning

Credits 3

This course is designed to provide a broad exposure to common theoretical frameworks in the field of personal finance.

Repeat for Credit

N

Requisites

Prerequisite: PFP 806, PFP 888, PFP 890, PFP 906 or equivalent graduate level research or statistics courses.

Typically Offered

Fall

PFP 890 - Research Methods in Personal Financial Planning II

Credits 3

Intermediate research methods course with a focus on the dissertation proposal process.

Repeat for Credit

N

Requisites

Prerequisite: PFP 888 and PFP 806

Typically Offered

Spring

PFP 894 - Professional Issues in Personal Financial Planning

Credits 1

Implications of research findings in preparation for professional work in teaching, research, and practice of personal financial planning.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PFP 900 - Research Seminar

Credits 1-2

In this course, students will attend a research seminar during which a scholar will present current research on topics relevant to Personal Financial Planning. Speakers may include KSU faculty, advanced PFP graduate students, and researchers from other institutions. Students and faculty not only listen to learn from the speaker's expertise but also actively engage with the presentation by asking questions. Asking questions is critical for scientific inquiry and advancement. Questions should be asked to (1) allow the speaker to clarify or expand on material, (2) constructively criticize the methods, research design, or findings, and (3) suggest ways the scholar might improve the analysis.

Repeat for Credit

Y

Typically Offered

Other

PFP 906 - Statistical Methods in Personal Financial Planning II

Credits 3

Advanced applied statistics course designed for graduate students with a foundation and understanding of basic and multivariable statistics. Examines panel data analyses, such as random-effects and fixed-effects regression, as well as issues involved using these techniques in personal financial planning datasets.

Repeat for Credit

N

Requisites

Prerequisite: PFP 806

Typically Offered

Spring

PFP 909 - Topics in Personal Financial Planning

Credits 0-3

Recent research, theory construction, and program development in personal financial planning, which will focus on selected relevant topics. Designed for doctoral students in personal financial planning.

Repeat for Credit

Y

Typically Offered

On sufficient demand

PFP 956 - Clinical Research and Applications in Financial Counseling and Planning

Credits 3

An overview of client relationship building strategies and the design and application of clinical research methods. Designed for doctoral students in personal financial planning.

Repeat for Credit

N

Requisites

Prerequisite: Doctoral Student in Personal Financial Planning.

Typically Offered

Summer

PFP 979 - Global Issues in Personal Financial Planning

Credits 3

This course study will give students the opportunity to examine cross cultural differences in defining and practicing personal financial planning. This course will allow students to gain experiences familiarizing them with different cultural views. Students are expected to present research related to the areas of financial planning and counseling to their international counterparts. Students will have the opportunity to learn from guest lecturers and students as well as to experience local culture through sight visits.

Repeat for Credit

N

Requisites

Prerequisite: Completed at least 24 graduate credits.

Typically Offered

Spring-Even Years

PFP 990 - Dissertation Proposal Seminar

Credits 1

Presentation and discussion of proposals for dissertation research.

Repeat for Credit

N

Requisites

Prerequisite: Six hours of statistics, three hours of research design or methods, and consent of major professor.

Typically Offered

Other

PFP 999 - Dissertation Research

Credits 1-21

Presentation and discussion of final dissertation research.

Note

Consent of School

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PHILO 100 - Introduction to Philosophical Problems

Credits 3

An introduction to some of the main problems of philosophy, such as the nature of morality, knowledge, mind and body, political authority, and the existence of God.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PHILO 105 - Introduction to Critical Thinking

Credits 3

A basic introduction to both deductive and inductive reasoning. Emphasis is placed on constructing, analyzing, and evaluating arguments.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

PHILO 110 - Introduction to Formal Logic

Credits 3

Systematic study of deductive reasoning (and possibly inductive reasoning) using the techniques of modern logic. Examines different types of valid inference, the logical structure of English sentences, and the validity of arguments generally. Involves the development and use of

a symbolic system which models logical relations among sentences.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

PHILO 112 - Causal and Statistical Reasoning

Credits 3

This course introduces students to some ideas about causation, and also to some elementary tools for thinking both critically and constructively about causal claims. The treatment is broadly formal, and introduces ideas from statistics, computer science, and philosophy, but requires no mathematical background beyond high school algebra. Some sections are taught using web-based course-ware.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

PHILO 115 - Introduction to Philosophy of Religion

Credits 3

Arguments pertaining to the existence of God, the nature of religious experience, the problem of evil, the proper relation between reason and faith, and religious diversity.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PHILO 120 - Introduction to Philosophy of Art

Credits 3

Philosophical problems concerning the concepts of art and aesthetic value, patterns of reasoning in art appreciation and criticism, and writing histories of art and artistic movements.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

PHILO 125 - Introduction to Philosophy of Science**Credits 3**

Examines the nature of science and how it differs from pseudo-sciences such as astrology, and raises questions about the nature of reality and social value of science.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PHILO 130 - Introduction to Moral Philosophy**Credits 3**

Philosophical issues arising in and about morality, such as the nature of moral judgments, moral knowledge, moral justification, and the relation of morality to religion. Topics might be approached by a study of contemporary moral Problems, by reading of classical texts, or by both methods.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PHILO 131 - Introduction to the Philosophy of Gender**Credits 3**

Introduction to philosophy focusing on the concept of gender and its effects in the world, including the metaphysics, language, ethics and the social-political implications of gendered concepts and language.

Repeat for Credit

N

Typically Offered

Fall, Spring

PHILO 132 - Introduction to the Philosophy of Sex and Love**Credits 3**

An introduction to philosophy that focuses on philosophical issues pertaining to intimate human relationships, including the concept of love, the ethics of sexuality, and the role of biology and culture in shaping our intimate lives.

Repeat for Credit

N

Typically Offered

Fall or Spring

PHILO 135 - Introduction to Social and Political Philosophy**Credits 3**

Examines rival theories of justice and applies them to current debates about economic inequality, gender, race, and sexual orientation. Combines some influential historical texts with contemporary philosophical literature on current political issues.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PHILO 137 - Introduction to Religious Freedom and Democracy**Credits 3**

Religious freedom and religious toleration. Consider this topic in a variety of contexts, including Western democracies and Muslim majority states.

Repeat for Credit

N

Typically Offered

Fall or Spring

PHILO 138 - Ethics and Social Media**Credits 3**

Introduces ethical theories, concepts and methods, e.g. utility, rights and perfect obligations in deontic and consequentialist theories, and applies them to ethical issues in social media, e.g. privacy, bullying, hate speech, doxing, bots and preferences in dating apps. Students learn to evaluate and apply competing ethical systems, and to defend the resulting analysis in written form.

Note

Rationale: The 2030 plan for KSU highlights the need to increase recruiting efforts, train students in ways relevant to their future careers and post-university lives, while maintaining credible academic standards. The Philosophy Department has been offering 100 level courses in ethics (e.g., Introduction to Moral Philosophy) as part of the general education requirement for students in A&S. This proposal has several aims: 1) to create a course in the ethics of social media developing the analytic skills common to philosophical courses in ethics while applying those skills to issues of social importance and interest to students, which course should be 2) available to on-campus students, 3) appropriate for offerings through Global Campus, and 4) made accessible in the near term to high school students in addition to all KSU students.

Repeat for Credit

N

Typically Offered

Fall or Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 140 - Introduction to Philosophy of Mind**Credits 3**

Philosophical problems concerning the nature of human beings, including the relation between mind and body, the existence of the soul, the nature of consciousness, the possibility of artificial intelligence, human freedom and personal identity.

Repeat for Credit

N

Typically Offered

Fall, Spring

PHILO 145 - Historical Introduction to Philosophy**Credits 3**

Introduction to philosophy through the study of major thinkers in the history of philosophy, such as Plato, Descartes, Hume. Topics may include the immortality of the soul, the existence of God, skepticism, reasons for being moral.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

PHILO 150 - Introduction to Philosophy of Feminism**Credits 3**

Philosophical examination of issues such as femininity and masculinity, the social conditions of gender equality, multiculturalism and gender, affirmative action, sexual harassment, and welfare policy.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 160 - Introduction to Philosophy of Law**Credits 3**

Examines fundamental issues concerning the nature and justification of legal institutions. Topics selected from: the nature of law and its relations to morality, criminal justice and punishment, responsibility and liberty, and legal interpretation.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

PHILO 175 - Philosophical Composition**Credits 4**

The purpose of this course is to provide students an introduction to philosophy while assisting them to further develop writing skills in preparation for Expository Writing II. Topics covered vary, but typically are related to understanding ourselves and our moral practices.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 100 and open only to freshmen and sophomores.

Typically Offered

Spring

PHILO 180 - Introduction to Philosophy of Race**Credits 3**

Introduction to concepts of race and racial identity; contemporary controversies about the nature of racism and social justice are examined through theories of ethics and political philosophy using various sources, including movies, music, social media.

Repeat for Credit

N

Typically Offered

Fall or Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 185 - Engineering Ethics**Credits 3**

An examination of the principles of ethics as applied to cases arising in the practice of the various branches of engineering.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 215 - Honors Introduction to Philosophy**Credits 3**

Central problems of philosophy, such as skepticism and knowledge, the nature of human minds, freedom, the nature of morality, justice and the existence of God.

Note

For students in an honors program.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 230 - Honors Introduction to Moral Philosophy

Credits 3

Philosophical issues arising in and about morality. Topics selected from: the nature of moral judgments, moral knowledge, moral justification, and the relation of morality to religion.

Note

For students in an honors program.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 295 - Introduction to Environmental Ethics

Credits 3

Introduces and compares ethical theories applying to issues arising from the use and exploitation of the environment, such as the value of biodiversity, obligations to future generations, obligations to non-humans, and the ethics of environmental risk management.

Repeat for Credit

N

Typically Offered

Fall or Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 297 - Honors Introduction to the Humanities I

Credits 3

Study of selected major works of history, literature, and philosophy which have been of central importance in the Western cultural tradition. Considerable emphasis is placed on classroom discussion and writing interpretive essays.

Note

For students in an honors program. Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

ENGL 297, HIST 297, MLANG 297

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

PHILO 298 - Honors Introduction to the Humanities II

Credits 3

Continuation of PHILO 297.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 297 or consent of instructor.

Typically Offered

Spring

Crosslisted

ENGL 298, HIST 298, MLANG 298

PHILO 300 - History of Ancient Philosophy

Credits 3

Ancient Greek Philosophy, particularly in the writings of Plato and Aristotle. Pre-Socratic and/or Hellenistic philosophers may be represented as well.

Repeat for Credit

N

Requisites

Prerequisite: One course in philosophy, major standing, or consent of instructor.

Typically Offered

Fall

K-State 8

Historical Perspectives

PHILO 301 - History of Philosophy**Credits 3**

This course introduces students to the development of philosophical ideas from ancient Greece to the modern era, and develops skills in the critical interpretation of original texts.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

PHILO 303 - Writing Philosophy**Credits 3**

Introduction to philosophical composition to develop skills necessary to succinctly explicate single arguments, dialectics relating several arguments, and critical analyses of arguments. Philosophical topics covered vary, but typically are related to understanding ourselves and our moral practices.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

PHILO 305 - Introduction to Decision Theory**Credits 3**

Introduction to decision and social choice theory emphasizing theories of utility, equilibria, and aggregation.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 320 - Symbolic Logic I**Credits 3**

First order logic, covering truth tables and truth functions, and derivations in both propositional and predicate logic.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

**PHILO 326 - Philosophy of Science:
Evidence, Evolution and Intelligent Design****Credits 3**

This course is an introduction to philosophy of science using the controversy over evolutionary theory and creation science/intelligent design to explore ideas about evidence, explanation and tests of scientific theories.

Repeat for Credit

N

Typically Offered

Fall or Spring

PHILO 330 - Moral Philosophy**Credits 3**

An introduction to ethics, surveying central issues in normative ethical theory with an emphasis on consequentialism, virtue theory, and deontology.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 331 - Philosophy of Gender

Credits 3

The concept of gender and its effects in the world, including the metaphysical nature of gender, the potentially gendered nature of many areas of "traditional" philosophy, the nature of structural injustice, and the way in which gender influences life choices in areas such as career, family life, and sexuality.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

PHILO 332 - Philosophy of Sex and Love

Credits 3

Engages philosophical issues pertaining to intimate human relationships, including the concept of love, the ethics of sexuality, and the role of biology and culture in shaping our intimate lives.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

PHILO 335 - Introduction to Social and Political Philosophy

Credits 3

Introduction to modern social and political philosophy, examining questions about central political values, such as equal citizenship, property rights, distributive justice, fairness, and democratic social and political institutions.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

PHILO 336 - Global Justice

Credits 3

Addresses philosophical and ethical issues of global and international justice, including responsibility to help the poor, human rights, cosmopolitanism and global equality, the moral dimensions of immigration, just war, global health, and responsibility for combatting climate change.

Repeat for Credit

N

Requisites

Prerequisite: One philosophy course or consent of instructor.

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

PHILO 337 - Religious Freedom and Democracy

Credits 3

Religious freedom and religious toleration. Consider this topic in a variety of contexts, including Western democracies and Muslim majority states.

Repeat for Credit

N

Typically Offered

On sufficient demand

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

PHILO 340 - Justification and Reliable Knowledge

Credits 3

This course offers an introduction to epistemology, surveying the historical development of important theories of knowledge, alternative conceptions of justification, and differing ideas about evidence and reliable inference.

Repeat for Credit

N

Requisites

Prerequisite: One philosophy course, major standing, or consent of instructor.

Typically Offered

Fall

PHILO 345 - Worlds, Things and Properties

Credits 3

Introduction to metaphysics, surveying the historical development of different metaphysical theories, including alternative conceptions of causation and of identity through time, and alternative theories about the relationship between physical and non-physical (e.g. mental) properties.

Repeat for Credit

N

Requisites

Prerequisite: One course in philosophy, major standing, or consent of instructor.

Typically Offered

Spring

PHILO 346 - Grasping Reality: The Art of Analysis

Credits 3

Introduction to the formal and informal methods of philosophical analysis. Topics include thought experiments, reflective equilibrium, counterfactual analysis, conceptions of 'knowledge' and 'evidence', notions of proof, causation and causal inference, supervenience, natural laws and other dependence relations.

Repeat for Credit

N

Typically Offered

Fall

PHILO 352 - Philosophy of Horror

Credits 3

Explores philosophical themes in horror films, including the nature of fear and why humans enjoy feeling afraid; the relationship between fear and humor; existentialism and attitudes towards death; the nature of justice; and the horror genre as a medium for social commentary on race, gender, and animal welfare.

Repeat for Credit

N

Typically Offered

Spring-Even Years

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PHILO 360 - Topics in Continental Philosophy

Credits 3

A study of selected figures (such as Kierkegaard, Fichte, Marx, Nietzsche, Beauvoir, Hegel, Schopenhauer, Sartre, Heidegger, Husserl, Wittgenstein, Gadamer, Ricoeur, Foucault, Lacan), or movements (such as Transcendental Idealism, Existentialism, Marxism, Phenomenology, Post-Modernism), or issues in continental philosophy (such as humanity's relation to God, free will, the state, irrationalism, gender, philosophical methodology).

Repeat for Credit

N

Typically Offered

On sufficient demand

PHILO 365 - Medical Ethics

Credits 3

Selected moral issues which confront the medical professional, including experimentation on human subjects,

informed consent, abortion, euthanasia, conflict of interest, and confidentiality.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 380 - Philosophy and Race

Credits 3

The concept of race and racial identity, and contemporary controversies about the nature of racism and social justice, examined through fiction, movies, and readings in biology, anthropology, history, and philosophy.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

PHILO 386 - Philosophy of Computer Science and Software Engineering

Credits 3

Explores conceptual, ethical, and practical questions about computers and software including the nature of computer science, digital rights, special and general AI, and the ethical responsibilities of software engineers.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

PHILO 390 - Business Ethics

Credits 3

An examination of the principles of ethics as applied to situations and practices in modern American business.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PHILO 399 - Honors Seminar in Philosophy

Credits 3

Honors Seminar in Philosophy

Repeat for Credit

N

Typically Offered

Fall

PHILO 492 - Computers and Society

Credits 1-2

A study of ethical issues raised by the impact of computers and associated technologies on society, including such topics as ethics of computer use, computer fraud, protection of privacy; legal, moral, and public policy-making responsibilities of computer professionals.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing plus concurrent enrollment in CIS 415; CIS 520.

Typically Offered

Spring

PHILO 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PHILO 501 - Perspectives on Science

Credits 3

Provides historical, philosophical, and sociological perspectives on science, its methods and products, the social processes by which its methods are deployed and its products used, and the ways in which its results become imbued with cultural meaning.

Repeat for Credit

N

Typically Offered

Fall, Spring

PHILO 510 - Symbolic Logic II

Credits 3

An advanced study of logical systems and problems in logical theory.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 220 or PHILO 110.

Typically Offered

On sufficient demand

PHILO 525 - Social-Political Philosophy

Credits 3

Examines key developments in contemporary political philosophy in such areas as liberalism, libertarianism, communitarianism, Marxism, and feminism, and on topics of special interest where these theories are applied.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 305, or PHILO 330, or PHILO 335 or consent of instructor.

Typically Offered

Spring

PHILO 535 - Philosophy of Law

Credits 3

Philosophical issues arising in the legal context, such as the nature of legal reasoning, the nature and scope of constitutional protections, the justification of punishment, affirmative action, and civil disobedience.

Repeat for Credit

N

Requisites

Prerequisite: One course in philosophy (PHILO 135, PHILO 160, or PHILO 330 recommended), or consent of instructor.

Typically Offered

Fall

PHILO 550 - Philosophy of Social Sciences

Credits 3

Epistemic methods and metaphysical presuppositions in the social sciences. Topics selected from: models, measurement, reduction, explanation, theories of function, theories of ideal types, and rational choice theory.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy, one of which must be PHILO 100 or PHILO 320.

Typically Offered

Fall, Spring

PHILO 565 - Advanced Topics in Medical Ethics

Credits 3

An advanced, focused discussion of special topics in the biomedical sciences. Topics vary and include the ethics

governing human experimentation, stopping rules for CRTs, justice in funding medical research, justice in the distribution of access to medical care, decision rules for choice of treatment, definitions of disease, medicalization of behavioral patterns, and other related topics.

Repeat for Credit

Y

Requisites

Prerequisite: PHILO 365

Typically Offered

On sufficient demand

PHILO 570 - Aesthetics

Credits 3

A study of selected topics in aesthetics and the philosophy of art.

Repeat for Credit

N

Requisites

Prerequisite: One course in philosophy or consent of instructor.

Typically Offered

On sufficient demand

PHILO 585 - Ethics

Credits 3

Examines key developments in moral philosophy. May focus on issues in metaethics, ethical theory, or history of ethics.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 330.

Typically Offered

Fall, Spring

PHILO 590 - Topics in Philosophy

Credits 3

A study of selected topics in applied ethics, applied philosophy, or the continental tradition.

Repeat for Credit

N

Requisites

Prerequisite: One course in philosophy.

Typically Offered

On sufficient demand

PHILO 595 - Environmental Ethics

Credits 3

Ethical issues that arise from the use and exploitation of the environment, such as the value of biodiversity, obligations to future generations, obligations to non-humans, and the ethics of environmental risk management.

Repeat for Credit

N

Requisites

Prerequisite: One course in philosophy, or one course in the natural sciences.

Recommended Pre-requisite: Philo 330.

Typically Offered

Fall, Spring

PHILO 601 - Advanced Issues in the History of Philosophy

Credits 3

Particular sets of issues in the history of philosophy or in-depth examination of the thought of a particular philosopher. Emphasis on issues in metaphysics and epistemology.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy and consent of instructor. Depending on topic, PHILO 300 or PHILO 301 required.

Typically Offered

Fall, Spring

PHILO 610 - Special Topics in Logic

Credits 3

Examination of one or more advanced topics in mathematical or philosophical logic, such as: modal, temporal, and epistemic logics; counterfactuals; intuitionistic and other sub-classical logics; higher-order and other super-classical logics; formal semantics of natural language; or theories of truth.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 110 or PHILO 320, or consent of instructor.

Typically Offered

On sufficient demand

PHILO 615 - Philosophy of Religion

Credits 3

Concepts of religion, including truth and faith, God and atheism, reason and revelation, morality and religion, evil, humanity, sin, salvation, eschatology.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy. PHILO 305, PHILO 320, or PHILO 340 recommended.

Typically Offered

Fall, Spring

PHILO 620 - The Development of Analytical Philosophy

Credits 3

The history of analytic philosophy from 1870 to 1960, examining the works of most of the following philosophers: Frege, Russell, Wittgenstein, Moore, the logical positivists, and Quine.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy, one of which must be PHILO 110 or PHILO 320.

Typically Offered

Fall, Spring

PHILO 625 - The Philosophy of Language

Credits 3

Philosophical problems concerning the nature of language and such concepts as meaning and truth.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy, one of which must be PHILO 110 or PHILO 320.

Typically Offered

Fall, Spring

PHILO 635 - Metaphysics

Credits 3

A critical examination of theories about objects and their qualities, causality, space, and time. Both traditional and contemporary sources may be used, but emphasis will be placed on the latter.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy. PHILO 305, PHILO 320, or PHILO 340 recommended.

Typically Offered

Fall, Spring

PHILO 640 - Epistemology

Credits 3

Philosophical issues relating to human knowledge. Issues selected from: the difference between knowledge and belief, whether knowledge is really attainable, whether we have epistemic duties and what they might be, what counts as justification for belief. Special topics may include self-knowledge, a priori knowledge, inductive knowledge, and naturalism.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy. PHILO 305, PHILO 320, or PHILO 340 recommended.

Typically Offered

Fall, Spring

PHILO 645 - The Philosophy of Science**Credits 3**

Philosophical problems concerning science, its methods. Topics selected from: qualitative and quantitative confirmation theories and the nature of scientific theories, laws, and explanation in the physical and biological sciences.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy, one of which must be PHILO 110 or PHILO 320.

Typically Offered

Fall, Spring

PHILO 646 - Philosophy of Physics**Credits 3**

This course offers an exploration of the conceptual foundations of modern physics, including topics from relativistic space-time theories, quantum mechanics and gauge theories, and related topics in the philosophy of science, including the nature of physical laws, reduction, the measurement problem and non-locality.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy.

Typically Offered

Other

PHILO 647 - Philosophy of Biology**Credits 3**

This course will introduce a range of topics in the philosophy of biology, including: the conceptual foundations of evolutionary theory, interpretations of fitness and selection, group selection, definitions of species, epistemological problems in phylogenetic inference, design arguments, explanation in biological sciences and reliable modeling in ecology and evolutionary biology.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy.

Typically Offered

Other

PHILO 650 - Rationality and Action**Credits 3**

Philosophical issues connected with human action and reasons for action, such as the existence of objective reasons to act one way rather than another, the existence of reasons to act that do not stem from desires, the difference between reasoning about how to act and reasoning about what is true, the nature of intention and desire and their specific roles in action.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy.

Typically Offered

Fall, Spring

PHILO 655 - Philosophy of Mind**Credits 3**

A philosophical examination of major theories about the nature of the mind, mental causation, consciousness, intentionality, cognition and psychological explanation.

Repeat for Credit

N

Requisites

Prerequisite: two courses in philosophy. PHILO 305,

PHILO 320 or PHILO 340 recommended.

Typically Offered

Other

PHILO 660 - Advanced Ethics

Credits 3

Selected topics in contemporary ethical theory.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 330 and one other philosophy course.

Typically Offered

Fall, Spring

PHILO 665 - Philosophy of Economics

Credits 3

Moral and conceptual foundations of modern economic systems. Topics selected from: the relations between "economics rationality" and the quality of life, the just distribution of wealth, the nature of property rights, and the value of technology in society.

Repeat for Credit

N

Requisites

Prerequisite: Two courses in philosophy.

Typically Offered

Fall, Spring

PHILO 670 - Advanced Social-Political Philosophy

Credits 3

A study of a single topic in contemporary philosophical literature, with application to current political issues. Topic selected from: multiculturalism, minority rights, nationalism, justification of democracy.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 525 and one other philosophy course.

Typically Offered

Fall, Spring

PHILO 680 - Independent Study in Philosophy

Credits 1-18

Independent Study in Philosophy

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PHILO 685 - Current Topics in Metaphysics and Epistemology

Credits 3

Selected philosophical issues of current interest in analytic metaphysics and epistemology.

Repeat for Credit

Y

Requisites

Prerequisite: PHILO 340 and two additional philosophy courses.

Typically Offered

Fall, Spring

PHILO 690 - Special Topics in Philosophy

Credits 3

Selected topics in metaphysics, epistemology, philosophy of science, philosophy of language, or philosophy of mind.

Repeat for Credit

N

Requisites

Prerequisite: PHILO 320 and additional background courses required for topic.

Typically Offered
On sufficient demand

PHILO 701 - Topics in Metalogic

Credits 3

Selected topics in the analysis of first-order theories and the foundations of mathematics.

Repeat for Credit
Y

Requisites
Prerequisite: PHILO 510 or MATH 511.

Typically Offered
On sufficient demand

PHILO 801 - Topics in Philosophy and Methodology of Science

Credits 1-3

This course explores philosophical problems concerning sciences and its methods. Topics selected from: conceptual foundations of modern science, qualitative and quantitative confirmation theories, and the nature of theories, laws, and explanation in the sciences.

Note
Instructor permission.

Repeat for Credit
Y

Typically Offered
On sufficient demand

PHYS 017 - Colloquium in Physics

Credits 0

Weekly lectures on topics of current interest in physics by faculty and visiting scientists.

Repeat for Credit
N

Typically Offered
Fall, Spring

PHYS 101 - The Physical World

Credits 3

Presents an overview of physics for students who have little or no physics background. The Physical World is principally classical physics with some discussion of modern physics. The observations and phenomena are simple and basic.

Note
Three hours lecture a week. Not available for credit to students who have credit in PHYS 106.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

K-State 8
Empirical and Quantitative Reasoning
K-State 8 Tag 2
Natural and Physical Sciences

PHYS 102 - Current Topics in the Physical World

Credits 3

May include nuclear physics, atomic theory, quantum mechanics, chemistry, geology, molecular biology, astronomy, and other topics of current interest.

Repeat for Credit
N

Typically Offered
Fall

K-State 8
Empirical and Quantitative Reasoning
K-State 8 Tag 2
Natural and Physical Sciences

PHYS 103 - The Physical World Laboratory

Credits 1

This laboratory is designed to introduce students to the scientific method with an emphasis on basic physics experiments in mechanics, thermal physics, electricity and magnetism.

Note

Two hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PHYS 101.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 106 - Concepts of Physics**Credits 4**

An introductory course in physics which emphasizes the topics of physics normally presented to elementary school children. A qualitative approach with integrated laboratory, this course is recommended for students preparing for careers as elementary school teachers.

Note

Not available for credit to students who have completed PHYS 101.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 109 - Astronomy**Credits 3**

A qualitative study of the earth, sun, planets, stars, galaxies and the universe; a survey of what is known about the universe and how we know it.

Note

2 hours lecture and one 2-hour lab per week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 113 - General Physics I**Credits 4**

A basic development of the principles of mechanics, heat, fluids, oscillations, waves and sound. Emphasis is on conceptual development and numerical problem solving.

Note

Two hours lecture, one hour recitation, one hour quiz, and two hours lab week.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 114 - General Physics II**Credits 4**

The continued treatment of the fundamentals of electricity and magnetism, light and optics, atomic and nuclear physics. These concepts are used to understand D.C. and A.C. circuits, motors, and generators. Emphasis is placed on conceptual development and problem solving.

Note

Two hours lecture, one hour recitation, one hour quiz, and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 113.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 115 - Descriptive Physics

Credits 5

Covers mechanics, electricity, heat, light, sound, and atomic theory. Surveys of the major fields of physics concentrating on how physicists work to understand and describe physical phenomena.

Note

Two hours lecture, one hour quiz, and four hours studio a week. High school algebra.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 122 - Physics Today I

Credits 1

The first of a two-semester study of problem solving in physics. Introductory physics problems as well as problems encountered in research will be discussed. Introductory problems will focus on mechanics and thermodynamics. Research discussions will center on topics of current interest at K-State and elsewhere.

Note

One class of two hours per week.

Repeat for Credit

N

Requisites

Prerequisite: Physics major OR consent of instructor.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

PHYS 123 - Physics Today II

Credits 1

Second of a two-semester study of problem solving in physics. Introductory physics problems as well as problems encountered in research will be discussed. Introductory problems will focus on electricity, magnetism, and optics. Research discussions will center on topics of current interest at K-State and elsewhere.

Note

One class of two hours per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 122 AND (physics major OR consent of instructor).

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

PHYS 213 - Engineering Physics I

Credits 5

Mechanics and heat; for students of science and engineering.

Note

Two hours lecture, one hour quiz, and four hours studio a week.

Repeat for Credit

N

Requisites

Corequisite: MATH 220.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 214 - Engineering Physics II**Credits 5**

Sound, electricity, magnetism, light, and modern physics; for students of science and engineering.

Note

Two hours lecture, two hours recitation, one hour quiz, and four hours studio a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 213 AND corequisite MATH 221.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 223 - Physics I, Mechanics, and Thermodynamics**Credits 5**

For physics majors. Lecture and quiz in common with PHYS 213. Special studio.

Repeat for Credit

N

Requisites

Corequisite: (PHYS 122 OR consent of instructor) AND MATH 220.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 224 - Physics II, Electromagnetism, and Sound**Credits 5**

For physics majors. Lecture and quiz in common with PHYS 214. Special studio.

Repeat for Credit

N

Requisites

Corequisite: (PHYS 123 OR consent of instructor) AND PHYS 223 AND MATH 221.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 300 - Physics in Relation to Other Disciplines**Credits 1-3**

Variable content, offered only by prearrangement with the physics department and with the instructor. A brief syllabus will be available for each offering of PHYS 300 outlining the objectives and organization of the course for the semester in which offered.

Note

Consent of instructor.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 325 - Physics III, Relativity, and Quantum Physics**Credits 4**

An introduction to modern physics as exemplified by atomic, nuclear, condensed matter, and particle phenomena.

Note

Three hours of lecture and one two-hour lab per week.
A working knowledge of spreadsheets and use of computers as data analysis tools.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 399 - Physics Honors Seminar

Credits 1-3

Discussions of topics of current interest in physics.

Note

Students must be enrolled in the arts and sciences honors program or have permission of the instructor. Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 400 - Independent Study in Physics

Credits 1-3

Independent theoretical or experimental investigation of a topic for physics majors or for a senior honors thesis.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing AND consent of instructor.

Typically Offered

On sufficient demand

K-State 8

Empirical and Quantitative Reasoning

PHYS 451 - Principles of Contemporary Physics

Credits 3

A non mathematical introduction to twentieth century physics: relativity, quantum mechanics, the physics of solids, and fundamental particles.

Note

Not open to physics majors. Credit is not granted for both PHYS 451 and PHYS 452.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 101.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 452 - Contemporary Physics: Problems and Principles

Credits 4

An introduction to twentieth century physics; relativity, quantum mechanics, the physics of solids, and fundamental particles. The lectures are in common with PHYS 451.

Note

Three hours lecture and two hour lab each week. The laboratory will include the quantitative aspects of the subject matter.

Not open to physics majors. Credit is not granted for both PHYS 451 and PHYS 452.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 114.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 460 - Undergraduate Topics in Physics**Credits 1-6**

Special topics in physics not completely treated in other courses.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 114.

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 495 - Astronomy**Credits 3**

Topics in modern astronomy. Use of a telescope for observational astronomy will be emphasized.

Note

Two hours lecture and two hours independent observational astronomy a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 109.

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 497 - Senior Research in Physics**Credits 1-3**

Individually directed research in atomic physics, condensed matter, particle physics or physics education.

Repeat for Credit

Y

Requisites

Prerequisite: Senior in physics AND consent of instructor.

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 498 - Honors Tutorial in Physics**Credits 1-3**

Individually directed research in physics, normally taken as a preparation for writing an honors thesis.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 506 - Advanced Physics Laboratory**Credits 4**

The completion of experiments of current and/or historical interest in contemporary physics. Students develop skills in and knowledge of measurement techniques using digital and analog instruments. Various data analysis techniques are used.

Note

Four (4) class hours per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325.

Typically Offered

Spring

PHYS 515 - Physics for Science Teachers**Credits 1-4**

Study of current topics in physics, with laboratory experience and demonstration of the processes or phenomena under consideration. Topics and activities will be directed toward providing teachers with material for demonstrations and student experiments or projects. Examples of topics are: solar power, laser applications, holography, and subnuclear particles, relativity, or the historical development of some physical concept.

Repeat for Credit

Y

Requisites

Prerequisite: Two semesters of college physics.

Typically Offered

Other

PHYS 522 - Mechanics**Credits 4**

Principles of statistics and dynamics of systems of particles and rigid bodies. Topics include Newton's laws for one particle, non-inertial reference frames, central forces, system of particles, rigid body statics and motion in a plane and in three dimensions, Lagrangian mechanics and Hamilton's equations, oscillating systems and normal coordinates.

Note

Three hours of lecture and one hour recitation per week
The recitation will focus on mathematical methods and techniques applied to problem solving.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PHYS 532 - Electromagnetic Fields I**Credits 4**

An introduction to electricity and magnetism. The first of a two semester study of Maxwell's equations in both integral and differential forms. Topics include electrostatics with vector calculus; electrostatic potential solutions in rectangular, cylindrical, and spherical coordinates; dielectrics; electrostatic energy and capacitance; magnetostatics with vector calculus; Biot-Savart law; vector and scalar potentials for magnetisml magnetic

permeability; Faraday's law in integral and differential form; magnetic energy and inductance; displacement current; lumped oscillations and LCR systems; impedance.

Note

Three hours of lecture and one hour recitation per week. The recitation will focus on mathematical methods and techniques applied to problem solving.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214.

Typically Offered

Fall

PHYS 620 - Teaching University Physics

Credits 3

A discussion of techniques which will aid in the development of understanding the concepts in physics. Emphasis is placed on models of learning and teaching techniques which can be applied to the teaching of contemporary physics to university students. These models and techniques are used to analyze a teaching approach of topics, such as quantum mechanics, which is important to today's physicist.

Note

Three class hours per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Other

PHYS 633 - Electromagnetic Fields II

Credits 3

Second of a two semester study of Maxwell's equations in both integral and differential forms. Special relativity; Lorentz transformations; relativistic invariants; transformation properties of electric and magnetic fields and potentials; Lorentz force and electrodynamics; electromagnetic fields of a point charge; electromagnetic

waves; solutions to the wave equation in rectangular, cylindrical, and spherical geometries; wave propagation in matter; reflection, refraction, and transmission; wave guides and fiber optics; Fresnel equations; polarization; dipole radiation.

Note

Three lectures per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 532 OR graduate standing.

Typically Offered

Spring

PHYS 636 - Physical Measurements Instrumentation

Credits 4

A laboratory-oriented course to acquaint students with electrical circuits, their interfacing with measuring instruments, and their use in making physical measurements.

Note

Four class hours per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214 OR (PHYS 114 AND MATH 220) OR graduate standing.

Typically Offered

Spring

PHYS 639 - Computations in Physics

Credits 3

An introduction to applying computational and numerical techniques to solve problems of interest to physicists. Topics include the application of computational analysis and solution to physical problems in both classical, and quantum physics including particle structure and motion, interaction of particles with fields, and model building for simulation of physical phenomena. A practicum is an integral part of the course. Students will use both personal

computers and advanced workstations.

Note

One hour lecture, two hours of computer lab per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Other

PHYS 642 - Nuclear Physics

Credits 3

An introduction to the structure of the nucleus, radioactivity, and nuclear energy; the application of quantum mechanics to describe nuclear physics.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

On sufficient demand

PHYS 651 - Introduction to Optics

Credits 4

Introduction to modern concepts in optics: electromagnetic waves, propagation of light through media, geometrical optics of lenses, mirrors and simple optical instruments, polarization, interference, coherence, and diffractions.

Note

Taught in a studio format; three hours of lecture and two hours of laboratory per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 214 OR graduate standing.

Typically Offered

Other

PHYS 652 - Applied Optics and Optical Measurement

Credits 3

Topical approach oriented toward measurements including coherence, Fourier Optics, holography, light scattering, interferometry, laser technology.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 651 OR graduate standing.

Typically Offered

Other

PHYS 655 - Physics of Solids

Credits 3

An introduction to the physics of solids with an emphasis on energy band structures, electrical and optical properties of solids and solid state devices.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 662 OR graduate standing.

Typically Offered

Other

PHYS 662 - Introduction to Quantum Mechanics

Credits 4

Concepts and mathematical models of quantum physics. Solutions to the time independent Schrödinger equation, descriptions of one-electron and multi-electron atoms, electron spin and magnetic moments.

Note

Three hours lecture and one hour recitation per week. The

recitation will focus on mathematical methods and techniques applied to problem solving.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Spring

PHYS 664 - Thermodynamics and Statistical Physics

Credits 3

An introduction to thermodynamics developed from the concepts of statistical physics. Applications include the gas laws, concepts of heat and work, phase transitions, and kinetic theory with applications to statistical physics.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Fall

PHYS 691 - Introduction to Astrophysics

Credits 3

An introduction to the application of physical principles to understanding astronomical objects. Topics include properties of stars, stellar evolution, galaxies, and cosmology.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Other

PHYS 692 - Introduction to Cosmology

Credits 3

An introduction to the physics and astrophysics of the hot big bang model to the Universe.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Spring-Even Years

PHYS 694 - Particle Physics

Credits 3

An experimental and phenomenological introduction to high energy physics. The course will emphasize understanding the experimental basis of what is known about the subnuclear domain. Students will be asked to design simple conceptual experiments in addition to solving problems.

Note

Three hours of lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 325 OR graduate standing.

Typically Offered

Other

PHYS 701 - Cosmology

Credits 3

A general-relativity-based discussion of the physics of the hot big bang model of the Universe.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 692 OR graduate standing.

Typically Offered
Fall-Even Years

PHYS 707 - Topics in Physics

Credits 1-18

Special topics courses. Topics and credits announced for the semester in which offered. May be given in conjunction with lecture series by visiting scientists.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate OR senior standing, AND consent of instructor.

Typically Offered
Fall, Spring, Summer

PHYS 709 - Applied Quantum Mechanics

Credits 3

A study of Schrödinger's theory of quantum mechanics and its application to one electron atoms, multielectron atoms, quantum statistics, spectra of molecules and selected topics in quantum excitations of solids, nuclear physics, and elementary particles.

Note
Three hours of lecture per week.

Repeat for Credit
N

Requisites
Prerequisite: PHYS 662 OR graduate standing.

Typically Offered
Fall

PHYS 741 - The Physics of Lasers

Credits 3

The theory of lasers including Light-matter interactions, atomic rate equations, threshold and oscillation; resonators and cavity modes; and laser dynamics including Q-switching and mode-locking.

Repeat for Credit

N

Requisites
Prerequisite: PHYS 652 OR graduate standing.

Typically Offered
On sufficient demand

PHYS 775 - Biological Physics

Credits 3

This lecture course introduces basic cellular biology for students lacking a biological background and established connections between molecular and cellular phenomena (such as photosynthesis, cellular foraging, and nerve stimulation) and experimentally verifiable models built from physical (classical, statistical, and quantum mechanical, as well as electromagnetic) considerations.

Repeat for Credit
N

Requisites
Prerequisite: PHYS 214 OR (PHYS 114 AND MATH 220) OR graduate standing.

Typically Offered
On sufficient demand

PHYS 800 - Problems in Physics I

Credits 1

Independent study of the solution of advanced problems in physics at a level appropriate to the M.S. Degree.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing AND consent of instructor.

Typically Offered
Spring

PHYS 801 - Mathematical Methods of Physics

Credits 3

Mathematical techniques for the solution of physical problems. Mathematical topics employed include vector and tensor analysis, matrices, group theory, complex

variable theory, differential equations, Sturm-Liouville theory, orthogonal functions, special functions, Fourier series, integral transforms, and the calculus of variations.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Fall

PHYS 802 - Computational Methods in Physics

Credits 4

Methods of solving physical problems using digital computers including numerical differentiation and integration, error analysis and curve fitting, interpolation, ordinary and partial differential equations, matrix operations, eigenvalues, special functions of mathematical physics. Monte Carlo simulations, and stability of solutions.

Note

Two hours lecture each week and a self-paced practicum.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Spring

PHYS 806 - Journal Club

Credits 1-18

Seminar in current topics in physics.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Fall

PHYS 807 - Graduate Physics Seminar

Credits 1

Lecture by faculty and graduate students on topics of current research interest.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Fall, Spring

PHYS 808 - Advanced Problems

Credits 1-18

Independent study in a special problem in physics at the graduate level chosen with the advice of a faculty mentor.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing AND consent of instructor.

Typically Offered

Fall, Spring, Summer

PHYS 811 - Quantum Mechanics I

Credits 3

Fundamental concepts and general formalisms of quantum theory and its applications to bound states, scattering or few state systems. Introduction to quantum applications of operators and state vectors.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 801.

Typically Offered

Spring

PHYS 821 - Advanced Dynamics

Credits 3

Study of Lagrangian and Hamiltonian mechanics. Includes canonical transformations, the Hamilton-Jacobi equation, and elements of classical chaos theory.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 801.

Typically Offered

Spring

PHYS 831 - Electrodynamics I**Credits 3**

The interaction of electrical charges with each other and radiation as described by the theory of Maxwell and Lorentz. Topics include Coulomb's law and vector fields, Ampere's law and magnetic fields. Faraday's law and inductive fields, continuity relations and conservation laws.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 801.

Typically Offered

Fall

PHYS 850 - Theory of Atomic Structure and Atomic Interactions**Credits 3**

The quantum mechanics of atomic structure and spectra: one and two electron atoms, many electron atoms, molecular structure and spectra, atomic collision theory for electron-atom and ion-atom collisions.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Other

PHYS 860 - Electron and Ion Impact Phenomena**Credits 3**

Atomic collision phenomena; experimental techniques in accelerator-based atomic physics; charged particle and photon spectroscopy; elastic, inelastic, and rearrangement collisions; and applications.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Other

PHYS 870 - Nonlinear and Quantum Optics**Credits 3**

Theory and applications of nonlinear optics: difference and sum frequency generation; ultrashort pulse characterizations; third order effects; Raman scattering; and higher harmonic generation. Fundamentals of quantum optics including field quantization; coherent state; nonclassical light; and optical tests of quantum mechanics.

Repeat for Credit

N

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

On sufficient demand

PHYS 881 - Introduction to Solid State Physics**Credits 3**

Introduction to the physics of condensed matter: crystal lattices; lattice dynamics; electron energy bands; fermi surfaces; optical, magnetic, and transport properties of insulators, semiconductors, and metals.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing OR consent of instructor.

Typically Offered

Other

PHYS 899 - Research in Physics

Credits 1-18

Master's level research.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing AND consent of instructor.

Typically Offered

Fall, Spring, Summer

PHYS 907 - Advanced Topics in Physics

Credits 0-18

Critical studies of selected advanced topics.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing AND consent of instructor.

Typically Offered

Other

PHYS 910 - Problems in Physics II

Credits 1

Independent study of the solution of advanced problems in physics at a level appropriate to the Ph.D. Degree.

Repeat for Credit

Y

Typically Offered

Other

PHYS 911 - Quantum Mechanics II

Credits 3

Formalisms and applications of quantum theory, including symmetry in quantum systems, space-time symmetries, the rotation group, many body systems, and an introduction to relativistic quantum mechanics.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 811.

Typically Offered

Fall

PHYS 912 - Advanced Quantum Mechanics

Credits 3

Relativistic quantum mechanics; scattering theory; second quantization and the many-body problem. Introduction to quantum electrodynamics.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 911.

Typically Offered

On sufficient demand

PHYS 913 - Advanced Topics in Mathematical Physics

Credits 3

Critical studies of selected advanced topics.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 801.

Typically Offered

Other

PHYS 914 - Quantum Field Theory

Credits 3

Topics may include second quantization, quantization of the free scalar and Dirac fields, quantum electrodynamics,

quantization of the electromagnetic field, propagators and Feynman rules, or other contemporary topics in quantum field theory.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 911.

Typically Offered

On sufficient demand

PHYS 915 - Quantum Field Theory II

Credits 3

Topics may include: Radiative Corrections of QED; Gauge Theories; Weak Interactions, Gauge Theory of Weak Interactions, Spontaneous Symmetry Breaking, and the Standard Electroweak Theory; Field Theory Methods, and Path Integrals; Quantum Chromodynamics; Regularization; Asymptotic Freedom.

Repeat for Credit

N

Requisites

Prerequisite: PHYS 914.

Typically Offered

Fall-Even Years

PHYS 931 - Electrodynamics II

Credits 3

The interaction of electrical charges with each other and radiation as described by the theory Maxwell and Lorentz. Topics include the propagation and production of radiation, Lorentz transformations and relativistic dynamics.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 831.

Typically Offered

Spring

PHYS 953 - Advanced Topics in Atomic Interactions

Credits 1-18

Critical studies of advanced topics in atomic interactions.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing AND consent of instructor.

Typically Offered

Other

PHYS 971 - Statistical Mechanics

Credits 3

The study of equilibrium states of physical systems involving many particles. Introduces basic concepts of statistical ensembles and presents applications to non-interacting systems for both classical and quantum-mechanical particles. Discusses aspects of interacting classical systems, including a brief introduction to phase transitions and critical phenomena.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 821.

Typically Offered

Fall

PHYS 981 - Solid State Physics

Credits 3

Quantized lattice vibrations, methods of band structure calculations, effective mass formulations, applications to optical absorption, excitons, magnetism, and superconductivity.

Note

Continuation of PHYS 881.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 811.

Typically Offered

Other

PHYS 982 - Advanced Topics in Solid State Physics**Credits 3**

Critical studies of selected advanced topics.

Repeat for Credit

Y

Requisites

Prerequisite: PHYS 881.

Typically Offered

Other

PHYS 999 - Research in Physics**Credits 1-18**

Doctoral level research.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing AND consent of instructor.

Typically Offered

Fall, Spring, Summer

PLAN 010 - Planning Field Trip 1**Credits 0**

Multi-day field trip experience in a location of planning significance. Students will learn about professional planning practice in location to develop planning knowledge base and apply findings to other courses.

Repeat for Credit

Y

Typically Offered

Spring

PLAN 020 - Planning Field Trip**Credits 0**

Multi-day field trip experience in a location of planning significance. Students will learn about professional planning practice in location to develop planning knowledge base and apply findings to other courses.

Repeat for Credit

N

Typically Offered

Spring

PLAN 115 - Introduction to Regional and Community Planning**Credits 3**

The origins and evolution of planning in response to economic, social, political, physical, and environmental issues. The planning process and its relationship to the design professions and the social and behavioral sciences.

Repeat for Credit

N

Typically Offered

Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

PLAN 215 - World Cities**Credits 3**

This course introduces undergraduates from a variety of disciplines to some of the major urban areas in the world, how and why they developed, what makes them unique, what it might be like to live there, and what issues they may face in achieving a sustainable future. This course gives students a way of thinking about cities in a global context that highlights both their differences and their similarities. Through lectures, text and other multi-media formats, students explore some of the main opportunities and challenges facing the inhabitants of large cities in today's world.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

PLAN 316 - Planning Principles Seminar**Credits 2**

Discussion of the principles and process of regional and community planning as practiced by the profession. The tools, skills and knowledge of the planning professions are presented in a focused introduction to the profession.

Repeat for Credit

N

Requisites

Corequisite: PLAN 315, admission to the Regional and Community Planning program.

Typically Offered

Fall

PLAN 320 - Community Development Field Workshop**Credits 3**

This course integrates meaningful field experiences with in-class instruction and reflection to introduce students to community assets. Coursework focuses on critical thinking, cultural literacy, and applied classroom knowledge of community assets to encourage shared civic engagement.

Repeat for Credit

N

Requisites

Prerequisite or co-requisite: PLAN 315.

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PLAN 444 - Career Planning Seminar**Credits 2**

Exploration and identification of career paths and development of academic plans for reaching personal and professional goals including specific coursework internships, study abroad and extracurricular activities.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 315.

Typically Offered

Fall

PLAN 510 - Graphic Composition and Representation for Planning**Credits 2**

A hands on, introductory course that prepares built environment professionals to meet the varying challenges of the practice world by making them familiar with digital graphic tools, representation and composition rules and skills, and color theory.

Repeat for Credit

N

Requisites

Corequisite: PLAN 215 or PLAN 315 and PLAN 640.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

PLAN 640 - Urban Design and Development**Credits 3**

Review of recent and historical developments of urban form and space, presented through lecture and discussion. Criteria and methodology for urban design and planning as well as the role of historic preservation.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 215 and PLAN 115.

Typically Offered
Fall

K-State 8
Historical Perspectives

PLAN 641 - Special Studies in Planning

Credits 1-18

Special Studies in the area of regional and community planning.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

PLAN 645 - Professional Internship Report

Credits 1

Oral and graphic presentation of work completed in PLAN 703.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 703

Typically Offered
Fall

PLAN 650 - Housing and Development Programs

Credits 3

Review and evaluation of historical and current housing issues, production, and financial systems, including consideration of racial, ethnic, income, and gender issues as they relate to the role of housing developments and programs in community development.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 315; ENGL 200.

Typically Offered
Spring

PLAN 655 - Land Development Planning

Credits 3

Examination of the process of land development in the United States, and its impacts from the perspective of developers, financial institutions, community planners, and city administrators. Focus is on the understanding of the land development process in meeting community goals and shaping land development to meet community expectations for the improvement of the community. Conflict resolution and negotiation skills represent a communication emphasis.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 315.

Typically Offered
Spring-Odd Years

PLAN 660 - Community Development Planning

Credits 3

Examination of past and present approaches to community development planning in the United States. Review and assessment of community development planning policies, programs and practices.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 315.

Typically Offered
Spring

PLAN 661 - Community Development Workshop

Credits 3

The organization, planning, design, development, and evaluation of community development projects with real clients and actual locations.

Repeat for Credit

N

Typically Offered

Fall

PLAN 665 - Professional Internship**Credits 1-9**

Internship with an approved planning sponsor subject to the approval of the departmental faculty.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 444.

Typically Offered

Fall, Spring, Summer

PLAN 667 - Transportation Planning**Credits 3**

The background, framing theories, professional activities and policy debates of transportation planning regarding transit, roads, non-motorized travel, energy use and climate change, land use, congestion, finance, economic development, health, safety, politics, asset management, politics, emerging technologies and the sharing economy.

Repeat for Credit

N

Typically Offered

Fall, Spring

PLAN 668 - Travel Demand Modeling**Credits 3**

The history, evolving theory, application, and debates surrounding travel demand modeling. Instruction in one of the main travel demand modeling software packages. Practical use of that software.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PLAN 670 - Planning in POP Culture**Credits 3**

Planning in POP Culture is an exploratory educational adventure of regional and community planning issues through the cultural media of song, literature, visual art, and film.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PLAN 672 - Collective Decisions**Credits 3**

Provides an introduction to planning as a collective decision-making tool; examines how planners work within a decision-making environment to move from regional and community planning concepts to implementing plans.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 315 or instructor permission.

Typically Offered

Fall, Spring

PLAN 674 - Regional Economic Development Policy**Credits 3**

Introduce students to the theory & practice of economic development at the sub-national level. Evaluate the design and implementation

of economic development activities.

Repeat for Credit
N

Typically Offered
Fall, Spring

PLAN 703 - Off-Campus Studies

Credits 5

Off campus studies fulfilled in an approved professional office, in an approved international studies program, or at the Kansas City Design Center (KCDC).

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

PLAN 704 - Report Preparation

Credits 3

Comprehensive data collection and analysis based on an approved research proposal.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 897

Typically Offered
Fall

PLAN 705 - Master's Project

Credits 3

Comprehensive application of research and planning through individual studies approved by the department faculty.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 897

Typically Offered
Spring

PLAN 707 - Writing and Thinking the City

Credits 3

Hands-on discussion and writing course focused on building an in-depth understanding of the growth, development and social dimensions of cities, and critical thinking and writing skills for built environment scholars and professionals.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 215 or PLAN 115.

Typically Offered
Fall

PLAN 718 - Principles and Strategies of Community Change

Credits 3

This course prepares built environment professionals to address the field of community development through application of community development principles and strategies.

Repeat for Credit
N

Typically Offered
Fall

PLAN 720 - Infrastructure and Plan Implementation

Credits 3

Examination of infrastructure systems, the transportation process, land-use, and development standards; consideration of policy options and strategies; review of financing options and regulatory requirements associated with the various infrastructure elements. The course also reviews social and other issues that affect and are affected by infrastructure related decisions.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 115 or PLAN 215.

Typically Offered

Fall

PLAN 730 - Planning Professional Practice**Credits 3**

Students will learn the functions of public and private sector professional practice including organizational structures, administration and management, and professional ethics.

Repeat for Credit

N

Typically Offered

Fall

PLAN 740 - Small Community and Rural Area Planning**Credits 3**

Synthesis of small community and rural area change, including socio-economic-political determinants as bases for community design and planning.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 115.

Typically Offered

Fall

PLAN 741 - Special Studies in Planning**Credits 1-18**

Special Studies in the area of regional and community planning.

Repeat for Credit

Y

Requisites

Prerequisite: PLAN 115.

Typically Offered

Fall, Spring, Summer

PLAN 749 - Metropolitan Planning and Design**Credits 3**

Examination of urban form and the making of livable and sustainable metropolitan regions from an urban design perspective. Introduction to public and private roles in the creation of urban form at regional, city, neighborhood, and site scales; consideration of regional and global consequences of local decisions; examination of design tools and methods used to shape decision making in urban development. Mixed lecture/seminar/workshop format. Interdisciplinary course open to students in architecture, landscape architecture, regional and community planning and related disciplines.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 115.

Typically Offered

Spring

PLAN 753 - Planning Law**Credits 3**

Examination of the evolution and current state of land use regulation within constitutional limits. Introduction to zoning, subdivision, and other police power controls within the comprehensive planning process.

Repeat for Credit

N

Typically Offered

Fall

PLAN 755 - Professional Practice: Discipline-Specific Topics**Credits 1**

Covers discipline-specific concerns, focusing on issues specific to architecture, interior architecture and product

design, landscape architecture or regional and community planning.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 316.

Typically Offered

Fall, Spring

PLAN 765 - Growth Management

Credits 3

Study of the process of city growth and change in relation to planning techniques and socio-economic-political determinants. Criteria and methodology for the growth management are reviewed and applied to the contemporary city.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 315, PLAN 720.

Typically Offered

Spring

PLAN 801 - Knowledge Methods

Credits 3

A course on quantitative analytical methods for planners. The students will learn problem solving and data analysis in the planning profession such as population project, economic analysis and introductory statistics.

Repeat for Credit

N

Typically Offered

Fall

PLAN 802 - Planning Methods II

Credits 3

The application of computer concepts to problem solving and data analysis in the planning profession for community demographic analysis, economic analysis, and market

analysis. Included are elements of professional report preparation and visual graphic presentations of planning projects for use in public meetings and for public viewing. Material developed in PLAN 801 form the subject matter of the presentations.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 801.

Typically Offered

Spring

PLAN 803 - Community Research Methods

Credits 3

Focus is on the analytical tools for the selection, collection, analysis, and interpretation of regional and community policy planning activities. Included is the development of survey instruments and interpretation, work flow and work measurement skills, performance standards and program evaluation techniques for policy planning and analysis at the local governmental level.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 225, STAT 250, STAT 702, or STAT 703.

Typically Offered

Fall

PLAN 805 - Internship in Planning

Credits 1-4

Assignment to a planning staff for a period of at least 10 weeks; supervision by a professional planner with periodic reports of activities to planning faculty.

Repeat for Credit

Y

Requisites

Prerequisite: Completion of two semesters of graduate study in planning.

Typically Offered
Fall, Spring, Summer

PLAN 812 - Planning Theory & Law

Credits 3

A course on planning theory and planning law. Students will learn about the procedural theories and legal frameworks that support planning practice.

Repeat for Credit
N

Requisites
Prerequisite: PLAN 115.

Typically Offered
Spring

PLAN 815 - Planning Theory, Ethics and Practice

Credits 3

Review of the basic theories of regional and community growth and change, analysis of the process of urbanization in relation to societal determinants and environmental constraints, and the study of a process of planning for professional practice. Exploration of societal and human values in relation to issues of equity, social justice, economic welfare, and efficient use of resources, as well as ethical approaches to these issues.

Repeat for Credit
Y

Requisites
Prerequisite: PLAN 115.

Typically Offered
Spring

PLAN 836 - Plan Making

Credits 5

This course is about plan-making. Students will learn criteria, standards, and methodology for community and/or regional analysis and planning, and apply them to the practice of planning.

Repeat for Credit

N

Requisites
Prerequisite: PLAN 315, PLAN 720 and GEOG 508 or equivalent.

Typically Offered
Spring

PLAN 880 - Topics in Planning

Credits 1-18

Independent study of selected concepts and trends in regional and community planning and development.

Repeat for Credit
Y

Requisites
Prerequisite: PLAN 803.

Typically Offered
Fall, Spring, Summer

PLAN 897 - Proposal Writing

Credits 2-3

Exploration of procedures of planning, design, scheduling, organization, and management of a regional and community planning research project.

Note
Thesis students enroll for 2 credit hours. Master's Project and Report students enroll for 3 credit hours.

Repeat for Credit
Y

Requisites
Prerequisite: PLAN 707 and PLAN 801.

Typically Offered
Fall, Spring

Crosslisted
PLAN/LAR 897: Proposal Writing

PLAN 898 - Master's Report

Credits 2

Comprehensive application of research and planning through individual studies approved by the department faculty.

Repeat for Credit

N

Requisites

Prerequisite: PLAN 704.

Corequisite: PLAN 705.

Typically Offered

Spring

PLAN 899 - Research in Planning

Credits 0-18

Original research and advanced study in regional and community planning, urban design, and related fields for the master's report/thesis.

Repeat for Credit

Y

Requisites

Prerequisite: PLAN 803 or LAR 725 or ARCH 725 and completion of two semesters of graduate study in planning.

Typically Offered

Fall, Spring, Summer

PLPTH 495 - Undergraduate Research in Plant Pathology

Credits 0-3

Research experience is offered in classical and molecular plant pathology and biotechnology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

PLPTH 500 - Principles of Plant Pathology

Credits 3

An introductory class in the nature of plant pathogens and the cause, effect, and control of plant diseases. Diseases of field and horticultural crops will be addressed.

Note

Two hours lecture, one 2-hr. lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198.

Typically Offered

Spring

PLPTH 575 - Topics in Plant Pathology

Credits 1-3

Discussions and lectures on important areas and contributions in the field of plant pathology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 576 - Special Topics in Plant Pathology

Credits 1-3

Discussions and lectures on important areas and contributions in the field of plant pathology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 585 - Crop Diseases

Credits 2

An overview of plant diseases associated with Kansas crops, with an emphasis on identification and management strategies.

Note

Two hours lecture and four hours lab a week. To meet first half of the semester.

Repeat for Credit

N

Requisites

Prerequisite: PLPTH 500.

Typically Offered

Fall

PLPTH 587 - Turfgrass Diseases and Their Management**Credits 1**

Biology, diagnosis and integrated management of turfgrass diseases. Emphasis is on diseases of intensively maintained turfgrass.

Note

Two hours lecture and two hours lab a week, for the first five weeks of the semester.

Repeat for Credit

N

Requisites

Corequisite: HORT 582 and HORT 515

Typically Offered

Fall-Even Years

Crosslisted

HORT 587

PLPTH 590 - Landscape Diseases**Credits 2**

An overview of plant diseases associated with Kansas greenhouse and nursery production systems as well as landscape settings, with an emphasis on identification and management strategies.

Note

One hour lecture and one lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PLPTH 500 or concurrent enrollment.

Typically Offered

Spring

PLPTH 610 - Biotechnology**Credits 3**

The use of biotechnology and molecular genetic approaches in plant and animal sciences. Emphasis is on the use of molecular techniques for plant and animal improvement.

Note

Three hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: ASI 500 or BIOL 398.

Typically Offered

Fall

Crosslisted

AGRON 610

PLPTH 676 - Fusarium Laboratory Workshop**Credits 1**

A one-week laboratory/lecture course on the identification, systematics, physiology, mycotoxicology, genetics, and molecular biology of fungi in the genus *Fusarium*. Students should not be enrolled in any other class while attending this workshop.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255 or BIOL 604; and consent of instructor.

Typically Offered
Summer-Odd Years

PLPTH 730 - Plant Nematology

Credits 3

An introduction to the morphology, taxonomy, and ecology of phytoparasitic and free-living nematodes found in plants, soil, and fresh water. Emphasis is on the identification and control of plant parasitic nematodes and on lab techniques used in their study.

Note
Two hours lecture, one 2-hr lab a week.

Repeat for Credit
N

Requisites
Prerequisite: PLPTH 500.

Typically Offered
Spring-Even Years

PLPTH 732 - Introduction to Plant Resistance to Pests

Credits 2

Basic concepts of the biology, ecology, genetics and breeding for pest resistance in plants.

Note
Four hours lecture and discussion a week. Meets first half of term.

Repeat for Credit
N

Requisites
Prerequisite: ENTOM 300 or PLPTH 500 or ENTOM 312 and ENTOM 313, and one course in plant or animal genetics.

Typically Offered
Fall-Even Years

Crosslisted
ENTOM 732 and AGRON 732

PLPTH 750 - Problems in Plant Pathology

Credits 1-3

Work is offered in general plant pathology, plant virology, plant nematology, disease physiology, epidemiology, and disease diagnosis.

Note
Consent of instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

PLPTH 755 - Plant Resistance to Diseases

Credits 2

To meet second half of semester for four hours per week. Survey of recent literature on conventional and novel strategies for obtaining durable resistance to plant diseases. Several well-characterized host/pathogen systems will be selected for in-depth analysis.

Repeat for Credit
N

Requisites
Prerequisite: ENTOM 732 or PLPTH 732.

Typically Offered
Fall-Even Years

PLPTH 765 - Integrated Plant Disease Management

Credits 2

Advanced topics in integrated plant disease management will be examined, including: epidemiological concepts, disease loss assessment, fungicides, resistance traits, on-farm research trials and utilization of precision agriculture technologies to measure disease impacts.

Note
The course will meet the second eight weeks of the semester.

Repeat for Credit
N

Requisites

Prerequisite: PLPTH 590 or concurrent enrollment with PLPTH 585.

Typically Offered
Fall

PLPTH 812 - Introduction to Integrative Genome Analysis

Credits 3

An introduction to genomics technologies genomics technologies, methods and approaches and their integration to the study of genome biology.

Note
Three hours lecture per week.

Repeat for Credit
N

Requisites
Prerequisite: BIOL 398 or ASI 500. Recommended Foundation Course: 700 level statistics course.

Typically Offered
Fall-Even Years

PLPTH 813 - Bioinformatics Applications

Credits 3

This course will cover the basic principles of regular bioinformatics applications and emphasize the practice of bioinformatics in biological research. The course will introduce the use of computation skills in data analysis focused on the application of bioinformatics in next-generation sequencing (NGS). The goal of this course is to help students be prepared for the next-generation biological research that often generates large data and requires researchers to have the capability in data management and data mining.

Note
Two hour lecture and two hours lab per week.

Repeat for Credit
N

Requisites
Recommended Foundation Courses: BIOL 398 or ASI 500 and a 700 level statistics course.

Typically Offered
Spring-Odd Years

PLPTH 820 - Population Genetics

Credits 3

Theoretical basis for and applications of population genetic principles to populations of humans, domesticated plants and animals, and natural ecosystems.

Note
Three hours lecture/discussion per week.

Repeat for Credit
N

Requisites
Prerequisite: ASI 500, BIOCH 521, MATH 220, and STAT 510 or STAT 703.

Typically Offered
Spring-Odd Years

PLPTH 835 - Plant Virology

Credits 3

A study of the composition, symptomatology, diagnosis, isolation, replications, molecular biology, genetics, and evolution of plant-infecting viruses.

Note
Two hours lecture a week plus one hour of recitation.

Repeat for Credit
N

Requisites
Prerequisite: ASI 500, BIOCH 521, BIOCH 522, and PLPTH 500.

Typically Offered
Fall-Odd Years

PLPTH 840 - Plant Pathogenic Bacteria

Credits 2

Emphasizes the diversity, mechanisms of pathogenicity, host-parasite relations, control measures, and the principles and methods of identifying plant pathogenic bacteria.

Note

The course will meet for half of the semester. Four hours lec/ week.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521, PLPTH 500.

Typically Offered

Spring-Odd Years

PLPTH 845 - Plant Pathogenic Fungi**Credits 3**

The isolation, handling, storage, inoculation, terminology and taxonomy of fungal pathogens of plants. Particular attention will be given to techniques used to study fungi and to the genus and species concepts for important plant pathogenic fungal genera.

Note

Two hr lecture, and one 3-hr lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PLPTH 500 and BIOL 604.

Typically Offered

Fall-Even Years

PLPTH 850 - Introduction to R Programming for Biologists**Credits 1**

An introduction to the R programming environment for biological applications, including an overview of data management, graphics, introductory statistics, phylogenetic analyses, biomathematical modeling, and bioinformatics.

Note

Lec/recitation Four half days.

Repeat for Credit

N

Requisites

Prerequisite: One course in introductory statistics or

quantitative biology.

Typically Offered

Summer

PLPTH 870 - Thesis/ Dissertation Proposal Seminar**Credits 1**

Theory and practice of research proposal development.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Spring

PLPTH 871 - Professional Communications in Plant Pathology**Credits 1**

Theory and practice of effective communication of plant pathology research and concepts to scientific and non-scientific audiences.

Note

Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall

PLPTH 880 - Plant Molecular Biology**Credits 3**

A study of plant genes and genome organization, plant gene expression and regulation, and functional analysis of plant genes.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521, PLPTH 610, or BIOL 541.

Typically Offered

Fall-Even Years

Crosslisted

AGRON 880

PLPTH 885 - Genomic Technologies Workshop**Credits 2**

Lecture and laboratory on the modern techniques to study genes and genomes.

Repeat for Credit

Y

Requisites

Recommended Foundation Course: One of the following courses: PLPTH 610, AGRON 610, BIOCH 521, BIOCH 522, BIOL 675, BIOL 676, PLPTH 680, AGRON 680

Typically Offered

Summer

PLPTH 898 - Master's Report**Credits 1-2**

Master's Report

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 899 - Research in Plant Pathology for the MS Degree**Credits 1-18**

Work is offered in each of the major pathogen groups, genetics of plant-microbe interactions, disease physiology, ecology, and epidemiology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 905 - Ecology and Epidemiology of Plant Pathogens**Credits 3**

Experimental and theoretical approaches to the study of plant disease ecology in agricultural and natural systems.

Note

Three hours lecture a week.

Repeat for Credit

Y

Requisites

Prerequisite: A course in Statistics, a course in Calculus, and one of the following: PLPTH 500, PLPTH 730, PLPTH 835, PLPTH 840, PLPTH 845, or a course in Ecology.

Typically Offered

Spring-Even Years

PLPTH 910 - Molecular Plant-Microbe Interactions**Credits 3**

Discussions of molecular and genetic perspectives of resistant and susceptible interactions between plants and bacterial, viral and fungal pathogens. Evaluation of current hypotheses on the nature of disease resistance.

Repeat for Credit

N

Requisites

Prerequisite: PLPTH 500, BIOCH 521, and BIOL 500; BIOL 450 or ASI 500; PLPTH 835, PLPTH 840, or PLPTH 845.

Typically Offered

Fall-Odd Years

PLPTH 915 - Advanced Plant Genetics**Credits 3**

In-depth treatment of advanced concepts in molecular, quantitative, and cytogenetics of plants.

Note

Three hrs. lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: AGRON 680.

Typically Offered

Fall-Odd Years

Crosslisted

AGRON 915

PLPTH 916 - Cytogenetics Laboratory

Credits 1

An advanced laboratory course in classical and molecular cytogenetic techniques, C-banding and fluorescence in situ hybridization techniques.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PLPTH 915

Typically Offered

Fall-Odd Years

PLPTH 920 - Topics in Plant Pathology

Credits 1-18

Discussions and lectures on important areas and contributions in the field of plant pathology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 921 - Special Topics in Plant Pathology

Credits 1-18

Discussions and lectures on important areas and contributions in the field of plant pathology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 922 - Teaching Practicum in Plant Pathology

Credits 1-2

Practical training in teaching courses offered in the Department of Plant Pathology. Most students will serve as Teaching Assistants.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PLPTH 927 - Fungal Genetics

Credits 3

A study of the classical, molecular, and population aspects of fungal genetics in both model and commercially important systems. Topics to be discussed include genetic analysis via mitosis and meiosis, models of recombination, genetic control of fungal development, basic molecular genetics of fungi, and genetic factors affecting fungal population structure and stability.

Note

Three hours lecture discussion a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521, ASI 500; Recommended Foundation Courses: BIOL 604 and a 600-level or higher course in genetics.

Typically Offered

Spring-Even Years

PLPTH 999 - Research in Plant Pathology for the PhD Degree**Credits 1-18**

Work is offered in each of the major pathogen groups, genetics of plant-microbe interactions, disease physiology, ecology, and epidemiology.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PMC 110 - Environmental Education and Leadership**Credits 1**

This course will help students develop and understand the value of outcome based outdoor recreation/environmental education experiences for youth. Students will gain experience in group dynamics and a variety of leadership approaches involving nationally recognized environmental education programs.

Note

Some local field trips are required.

Schedule by appointment.

Repeat for Credit

N

Requisites

Prerequisite: Park Management and Conservation majors only.

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

PMC 115 - Topics in Park Management and Conservation**Credits 1-3**

Discussion of topics and activities of importance in park management and conservation.

Note

Instructor permission required.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PMC 120 - Outdoor Recreation Certification**Credits 0**

This course is designed to provide the PMC major ability to obtain outdoor recreation certifications not directly taught by Kansas State University. Examples are numerous, and include Wilderness First Responder, Archery in Schools Instructor, Aquatic Facility Operator, Playground Inspector Certification, Leave No Trace. Certifications being accepted must involve a minimum of 16 hours of contact, exercise and assessment hours; or additional requirements can be added by PMC faculty to meet 16 hours of content.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PMC 210 - Intro to Outdoor Recreation**Credits 3**

Overview of the outdoor recreation industry and profession with emphasis on history of outdoor recreation in the U.S., current trends, public/private delivery systems, and associated individual and societal benefits. Highlights the breadth and diversity of the outdoor recreation industry and emphasizes the contributions and outcomes associated with outdoor recreation participation.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall

PMC 275 - Introduction to Natural Resource Management

Credits 3

A survey of historic and present-day uses, problems, and basic management approaches associated with our renewable and nonrenewable natural resources. The impact of society, economics, law, politics, and philosophy on the management and use of our natural resources will also be examined.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Natural and Physical Sciences

PMC 350 - Parks and Outdoor Recreation Practicum

Credits 1-2

Required professional work experience (paid or volunteer), 120 hours minimum for 1 hour of credit; 240 hours minimum for 2 credit hours of credit. Designed to provide the future park and recreation professional an opportunity to apply acquired professional knowledge, skills and abilities in a supervised setting. A special problem allows the student to explore a topic/issue of professional interest.

Repeat for Credit

N

Requisites

Prerequisite: Completion of at least 12 PMC (prefixed) core hours.

Typically Offered

Fall, Spring, Summer

PMC 410 - Natural Resource Based Tourism

Credits 3

This course will explore the obstacles and opportunities of using ecotourism and agritourism to contribute to rural economic development. Examples of successful ecotourism projects both domestically and internationally will be presented with an emphasis on the role of National Parks as tourism destinations. Agritourism efforts in Kansas will be highlighted and compared to similar efforts in other states and countries. Principles of attracting and managing tourists and park visitors in a sustainable manner also will be covered.

Repeat for Credit

N

Requisites

Prerequisite: PMC 275 Recommended Foundation Courses: PMC 210 and PMC 620.

Typically Offered

Fall

PMC 441 - Topics in Park Management and Conservation

Credits 0-18

Discussion of topics and activities of importance in park management and conservation.

Note

Instructor permission required.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PMC 475 - Natural History for Park Professionals

Credits 3

This course will introduce students to the vertebrate fauna

of Kansas. Specifically, students will learn to identify the amphibians, reptiles, birds and mammals found regularly in Kansas parks and wildlife areas. The course will prepare students to take the Kansas Conservation Officer wildlife identification test as well as prepare park interpreters and managers to identify species found in their parks and educate the public about them.

Note

One hour lecture and one three-hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PMC 275

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

PMC 489 - Outdoor Recreation Program and Event Development

Credits 3

A focused study of the design, supply, and marketing of specific outdoor recreation programs and events. The course will focus on tools and techniques of both the direct supply and facilitation of planned outdoor activities and events.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: PMC 275, Recommended Foundation Course: PMC 210

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

PMC 492 - Internship in Parks and Recreation

Credits 6

An intensive, paid practical experience with an approved agency, extending over a 10-week, 400-hour span.

Note

For seniors only.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PMC 495 - Undergraduate Research in Park Management and Conservation

Credits 0-3

Undergraduate students work with faculty mentors on projects involving various elements of research in PMC including identifying a problem, designing and conducting experiments, interpreting and communicating the research results. The completed project must be presented at a professional forum, and students are required to write a final project report on completion of their project.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PMC 510 - Forestry for Park Professionals

Credits 3

Principles and practices of managing forest resources in the park setting. Special emphasis will be given to tree management in high use areas such as parks where human visitors present special problems for tree survival and development.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Recommended Foundation Course: PMC 330.

Typically Offered

Fall

PMC 575 - Water Management for Natural Resource Managers

Credits 3

A study of the management of water resources for public and commercial uses. The course investigates the use of rivers, lakes, reservoirs, and marine resources. Management considerations, including agency policy formation, legal rights, use conflicts, and use valuation are covered.

Note

Three hours lecture a week.

Repeat for Credit

N

Typically Offered

Fall

PMC 580 - Park Operations and Maintenance Management

Credits 4

A focus on the principles and practices of operating and maintaining park and recreation areas and facilities. The focus of the course will be on the daily operation and related issues of various public parks (e.g federal, state, county and municipal) and specific park features, including: campgrounds, trails and OHV areas, marinas, zoos, shooting ranges, aquatic facilities, and multipurpose sports complexes and limited facilities.

Note

Two hours lecture and two hours lab a week, with an extended 8 hr on-site lab experience.

Repeat for Credit

N

Typically Offered

Fall

PMC 620 - Park Planning and Design

Credits 3

Analyzes park and protected area planning, its importance, the planning process from beginning to implementation, barriers to successful implementation, and problem-based solutions. Understanding the planning process, related planning policy and the importance of public involvement in the process are the main focus of this course.

Repeat for Credit

N

Requisites

Recommended Foundation Courses: PMC 210, PMC 275

Typically Offered

Spring

PMC 635 - Methods of Environmental Interpretation

Credits 3

This course focuses on principles and techniques necessary to communicate environmental and cultural values to visitors in park areas. The philosophy, theory, design, and application of interpretive media to communicate information about the environment is studied.

Note

Two hours recitation and three hours lab a week. Field trips required.

Repeat for Credit

N

Requisites

Prerequisite: PMC 210 and PMC 275

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

PMC 690 - Parks and Recreation Administration

Credits 4

This course will introduce students to the use of specific practices to effectively manage a contemporary leisure service enterprise. Special emphasis is placed on financial

management, human resource management, policy development, risk management and general administrative operations.

Note

Four hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: PMC 275 and Junior standing or Senior standing

Typically Offered

Spring

PMC 740 - Advanced Environmental Interpretation

Credits 3

This course builds on the principles and interpretive techniques which are introduced in RRES 635. Specifically, labs emphasize development of personal interpretive skills and students are introduced to interpretive media not covered in RRES 635 (e.g., video equipment, computers, etc.). The lecture and readings focus on the philosophy of interpretation and the theoretical framework for designing and evaluating interpretive strategies.

Note

One hour lecture and four hours lab a week. Field trips required.

Repeat for Credit

N

Requisites

Prerequisite: PMC 635.

Typically Offered

Spring

PMC 810 - Quantitative Research Methods in Park Management and Conservation

Credits 3

An overview of quantitative research design and methods in park management and conservation settings, focusing on survey design, scale development, and associated statistical

analyses.

Repeat for Credit

N

Typically Offered

Fall

PMC 820 - Outdoor Recreation Behavior

Credits 3

The practical and theoretical basis of recreational use of public and private lands is examined in the context of ecosystem management. The statutory and regulatory policies and current issues regarding the management and use of lands in wilderness systems, wild and scenic river corridors, parks, and protected areas are discussed in detail. The impacts of recreational uses on the environment and conflicts with other uses of land and resources are discussed. Land use planning policies and decisions, which respond to recreation, wilderness and protected area issues will be examined.

Repeat for Credit

N

Typically Offered

Fall

PMC 830 - Conservation Attitudes and Behaviors

Credits 3

Explores the development of the field, psychological constructs that influence behaviors, theories that explain the relationship of these constructs to conservation outcomes, strategies to foster a connection to nature, influencing responses to the natural and built environments, and how to cultivate sustainability through the adoption of conservation behaviors. The main focus is to understand the relationship of humans to nature and how this influences conservation.

Repeat for Credit

N

Typically Offered

Fall

POLSC 101 - Political Science First Year Orientation

Credits 1

Each meeting of Political Science Freshman Seminar covers a topic related to student success, including student help sources such as tutoring and academic coaching, the Career Center, student involvement opportunities within the Political Science Department (such as research), the university, and community. In addition, students develop a graduation plan after going over degree requirements and gain competency in navigating KSU online resources.

Repeat for Credit

N

Typically Offered

Fall, Spring

POLSC 107 - Political Science Colloquium**Credits 2**

Topics in political science chosen to illustrate current research of political scientists and approaches to the study of politics. Each time the course is offered, a syllabus will outline the topics to be studied and the way the course will be administered.

Note

Not open to political science majors.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

POLSC 110 - Introduction to Political Science**Credits 3**

Introduction to politics, public policy, and governmental processes from a political science perspective, studying political power, political thought, public opinion, groups, parties, institutions, public law, careers in politics, and related topics.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 111 - Introduction to Political Science, Honors**Credits 4**

Introduction to politics, public policy, and governmental processes. Distribution and use of political power, political thought, public opinion, groups, parties, institutions, public law, careers in politics, and related topics.

Repeat for Credit

N

Requisites

Prerequisite: Membership in arts and sciences honors program.

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 115 - U.S. Politics**Credits 3**

The national government with emphasis on constitutional principles, basic structure, functions, and the political process.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 135 - Introduction to Comparative Politics

Credits 3

Comparative analysis of politics in both "developed" and "developing" countries. Though some attention will be given to abstract and theoretical concepts, the emphasis will be on the actual political process in the countries selected for study.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 145 - World Politics

Credits 3

Introduction to the study of politics among nations-states and other world actors, including a survey of major contemporary problems of world politics and focusing on the pursuit of power, order, wealth, and safe environment.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 155 - Introduction to Political Thought

Credits 3

An introduction to the major themes and leading writers in political philosophy and a discussion of their application to modern politics. This course emphasizes learning how to read and appreciate classic texts.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

POLSC 250 - Environmental Political Thought: The Future of Food, Air, Water, and Soil

Credits 3

Environmental theories, with a concentration on the world's food production. Discusses important viewpoints past and present, including anarchist and socialist, New Right, liberal, conservative and democratic agrarian ideas concerning agriculture, food production and consumption, and how we should treat the environment in which we live.

Repeat for Credit

N

Typically Offered

Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

POLSC 307 - Introduction to Public Administration

Credits 3

The basic concepts of public administration, with emphasis on orientation for citizen understanding; the place of administration and the role of the administrator in the American political process; the organization and activities of government in carrying out public policy; administrative functions, organization, accountability, finance, and personnel.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

POLSC 321 - Kansas Politics and Government**Credits 3**

An introduction to the political institutions of, the political behavior in and surrounding, and the public policies flowing from governmental units in the state of Kansas.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 326 - United States Politics, Honors**Credits 4**

The national government with emphasis on constitutional principles, basic structure, functions, and the political process.

Repeat for Credit

N

Requisites

Prerequisite: Membership in an honors program.

Typically Offered

Fall, Spring, Summer

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 330 - Global Environmental Politics**Credits 3**

Examines international politics and policy surrounding efforts to address the human impact on the global

environment. Course material identifies initiatives to address global environmental problems via international agreements, their design and efficacy, and their interaction with sustainable economic development.

Repeat for Credit

N

Typically Offered

Fall or Spring

POLSC 341 - Politics of the World Economy**Credits 3**

Addresses the reciprocal relationship between politics and economics in the management and functioning of the world economy. Explores the political influences on worldwide trade, financial, and investment flows as well as development policies and financial institutions.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 343 - American Foreign Policy**Credits 3**

Examination of American external relations since 1945 and evaluation of processes involved in the formulation and conduct of contemporary foreign policy of the United States.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 350 - Current Political Issues

Credits 2

Each week a different political science faculty member or guest authority explains and analyzes current developments in state, national, and world affairs, using the news media as text material.

Note

Not for major credit.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Social Sciences

POLSC 355 - Contemporary Issues**Credits 3**

Study and analysis of selected political topics of immediate relevancy and concern.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

POLSC 360 - Race, Ethnicity, and Politics**Credits 3**

The course will address inequality and political power by examining the role of race and ethnicity in American politics and its contemporary significance to the nation's citizens, politicians, and governmental institutions. Among the specific topics covered are ethno-racial/political identities, political attitudes, partisanship, and voting. In addition, several contemporary public policy areas like policing, labor organizing, voting rights, and housing will be discussed.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

POLSC 366 - Practical Politics**Credits 3**

Strategies and techniques of running for office, organizing a campaign, mobilizing community resources, direct action lobbying, and related practical aspects of local level citizen politics.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

POLSC 372 - Ideologies: Their Origins and Impact**Credits 3**

Explores ideologies, including liberalism, conservatism, socialism, communism, and fascism. Their philosophical origins, transformation into systems of thought with mass appeal, and practical consequences are discussed. The conflict between ideology and philosophy is examined.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 377 - Introduction to Public Policy

Credits 3

The process of public policy formation and analysis with emphasis on the relationship between decisions taken, values maximized, and the social impact of these decisions in over 10 policy areas.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110 or POLSC 115 or another social science course.

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

POLSC 388 - Latin American Politics**Credits 3**

Comparative analysis of selected political systems of Latin America emphasizing political inputs, political organization, and political outputs. special consideration is given to problems of political change.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 390 - Middle East Politics**Credits 3**

Comparative analysis of selected political systems in the Middle East including nationalism and the conflict of differing ideologies. Validity and usefulness of various theories of political development are tested.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 399 - Honors Seminar in Political Science**Credits 1-3**

Honors Seminar in Political Science

Repeat for Credit

N

Typically Offered

Fall

POLSC 400 - Political Inquiry and Analysis**Credits 3**

Underlying principles and techniques used in the conduct of political science research.

Repeat for Credit

N

Requisites

Prerequisite: Introductory social science course or consent of instructor.

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

POLSC 401 - Topics in Politics**Credits 0-3**

Different subjects in politics are selected for intensive study.

Repeat for Credit

Y

Typically Offered

Other

POLSC 420 - Primary Texts Seminar**Credits 3**

Emphasizes intellectual history through the lens of social and political development. Students will learn about the impacts of cultural developments such as the awakening of ancient idealism, Renaissance philosophy and literature, the Scientific Revolution, the Enlightenment, and Postmodern philosophy and art.

Note

This course serves as the capstone class for the Primary Texts Certificate, and students in the program will complete their capstone paper within the context of the class, but the course open to all undergraduate students. This course is cross listed with DAS 420. Weekly class discussion is required. All reading materials are supplied by the Primary Texts Certificate program.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

DAS 420

POLSC 499 - Honors Project**Credits 3**

Open only to Arts and Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

POLSC 505 - South Asian Civilizations**Credits 3**

Interdisciplinary survey of recent and contemporary civilization in India, Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, and Afghanistan, including geography, philosophy, social, economic, political institutions, and historical movements.

Repeat for Credit

N

Requisites

Prerequisite: 3 hours of Social Science or junior standing.

Typically Offered

Fall-Even Years

Crosslisted

GEOG 505, HIST 505, ECON 505, ANTH 505

POLSC 510 - Internship in Government, Public Administration, and Politics**Credits 1-6**

Supervised field work at the international, national, state, and local levels of government or with political parties or other politically oriented voluntary organizations.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor and a minimum of one course in political science that is relevant to the internship area.

Typically Offered

Fall, Spring, Summer

POLSC 511 - Contemporary Chinese Politics**Credits 3**

Principal components of Communist Chinese ideology, conditions determining organizational structure, composition of present leadership, role of social forces, impact of external relations on other Asian nations and on the major world powers.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135 or junior standing.

Typically Offered

Other

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 524 - Political Islam**Credits 3**

Introduction to the main tenets of Muslim politics and a survey of thematic issues across the political systems in the Muslim world. Issues may include Muslim democracy, Islamist movements and political parties, Shia-Sunni conflict, Islamic law (shari'a), Islamophobia, violent organizations, Muslim public opinion, and the Arab Spring.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135 or POLSC 155 or instructor permission.

Typically Offered

Spring

POLSC 525 - US National Government and Politics**Credits 3**

Advanced overview of U.S. National Government. Especially tailored to meet content area needs of prospective K-12 teachers. Topics to be addressed include: the constitution and the American founding; political and electoral processes; institutional structure and function; and, public policy.

Note

Non-majors only.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 115.

Typically Offered

Spring

POLSC 526 - Comparative Political Institutions**Credits 3**

Analysis of political institutions in comparative perspective, including institutional creation and change, the functions and effects of institutional arrangements, as well as how they structure political behavior.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135

Typically Offered

Fall, Spring, Summer

POLSC 527 - Comparative Political Corruption**Credits 3**

Explores the meaning and origins of political corruption. Emphasizes constraints on power and the political economy of corruption-reform efforts from a comparative perspective.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135

Typically Offered

Fall, Spring, Summer

POLSC 540 - Global Security Threats**Credits 3**

Analysis of global threats to the security of societies and individuals emphasizing issues outside the traditional scope of international relations theory.

Repeat for Credit

N

Typically Offered

Fall, Spring

POLSC 545 - The Politics of Developing Nations**Credits 3**

Comparative analysis of politics in emergent states with emphasis on process of modernization and nation building.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110 or POLSC 135 or sophomore standing.

Typically Offered

Spring

POLSC 549 - International Defense Strategies**Credits 3**

Contemporary international strategies and defense policies with emphasis on nuclear, conventional, and guerrilla war, arms control and disarmament, diplomatic and political roles of the military.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145, POLSC 341, or junior standing.

Typically Offered

Fall

POLSC 550 - Political Geography and Geopolitics**Credits 3**

Critically analyzes relations between space and power in historical and contemporary geopolitical contexts, including topics such as sovereignty, border making, territorial disputes, and the formation (and dissolution) of nation-states.

Note

Cross-listed with GEOG 550

Repeat for Credit

N

Requisites

Recommended Foundation Course: POLSC 110 or POLSC 135 or POLSC 145

Typically Offered

Fall

Crosslisted

GEOG 550: Political Geography and Geopolitics

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

POLSC 576 - Mass Communications and Political Campaigns**Credits 3**

The roles of journalism, advertising and public relations in political campaigns. Examines campaign communication strategies, staffing, and the roles of political consultants. Analyzes how voter decision making is affected by mass communications and how voters develop attitudes about candidates and issues.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 115.

Typically Offered

Other

POLSC 601 - Topics in Political Science**Credits 3**

Extensive exploration of a specific problem in political thought. American government, comparative politics, international relations, or public administration.

Repeat for Credit

Y

Requisites

Prerequisite: POLSC 400.

Typically Offered
Fall, Spring, Summer

POLSC 603 - Political Parties and Elections

Credits 3

Origins, structure and function of political parties.
Dynamics of the two-party system. Roles of third parties.
Analysis of election results and voting behavior.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 110, POLSC 115 or junior standing.

Typically Offered
Fall

POLSC 604 - Interest Groups and Public Opinion

Credits 3

Group theory and politics. Structure, internal politics, and techniques of interest groups and their impact on public policy. Formation and measurement of public opinion.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 110 or POLSC 115.

Typically Offered
Spring

POLSC 605 - The American Presidency

Credits 3

The presidency as an institution, its evolution, congressional relationships, executive organization.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 110, POLSC 115 or junior standing.

Typically Offered
Other

POLSC 606 - Gender and Politics

Credits 3

Analysis of the role of gender in political behavior, including gender differences in voting and political participation, legal and cultural restrictions on women's rights and political activity, and women's liberation and other gender-based political movements.

Repeat for Credit
N

Requisites
Prerequisite: SOCIO 545 or POLSC 115.

Typically Offered
Spring

POLSC 607 - Administrative Law

Credits 3

Legal analysis of the rule-making, adjudicatory, and enforcement functions of administrative agencies, with emphasis on constitutional framework, judicial review, requirements of procedural fairness, and rights of public employees.

Repeat for Credit
N

Requisites
Prerequisite: One course in political science, United States history, or legal or political philosophy.

Typically Offered
Spring

POLSC 608 - Political Participation in the United States

Credits 3

A broad overview of the various tools of democracy: public opinion, political parties, interest groups, and elections.

Repeat for Credit
N

Requisites

Prerequisite: POLSC 110 or POLSC 115 or junior standing.

Typically Offered

Spring

POLSC 610 - Local Government Law**Credits 3**

Explores the dynamic relationship between states and cities. Major issues may include budget shortfalls, social issues, and sprawl. Focus on the legal framework of state and city powers, including the forms of government, state preemption, and home rule theory and practice.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110 or POLSC 115 or junior standing.

Typically Offered

Fall

POLSC 611 - The Legislative Process**Credits 3**

Legislative decision-making in modern democracy with emphasis on the United States, the concept of representation, and political behavior of participants in the legislative process.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 115, or junior standing.

Typically Offered

Spring

POLSC 612 - The Judicial Process**Credits 3**

The structure, process, and politics of the American judicial system. Analysis of important issues concerning law and courts.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 115 or junior standing.

Typically Offered

Other

POLSC 614 - Constitutional Law**Credits 3**

Principles of the American political system as prescribed by the Constitution and interpreted by Supreme Court decisions, with emphasis on the institutions and powers of the national government, federalism, and property rights.

Repeat for Credit

N

Requisites

Prerequisite: One course in political science, United States history, or legal or political philosophy.

Typically Offered

Fall

POLSC 615 - The Constitution, Civil Rights and Civil Liberties**Credits 3**

The Constitution as a limitation on governmental power, with emphasis on Supreme Court decisions defining fundamental civil rights and liberties.

Repeat for Credit

N

Requisites

Prerequisite: One course in political science, United States history, or legal or political philosophy.

Typically Offered

Spring

POLSC 618 - Urban Politics**Credits 3**

Fundamental problems of political power and decision making in urban suburban governmental settings.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110 or POLSC 115.

Typically Offered

Fall

**POLSC 619 - Comparative Agriculture
Politics and Policy**

Credits 3

Comparative examination of agricultural politics and policy with emphasis on decision making processes and the socio-political impacts of agricultural policy.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 135, or junior standing.

Typically Offered

Fall-Even Years

POLSC 620 - State and Local Government

Credits 3

The United States system of federalism with emphasis on a comparative analysis of the government and politics of the fifty states and their subdivisions.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110 or POLSC 115.

Typically Offered

Spring

POLSC 621 - West European Politics

Credits 3

Comparative analysis of British, French, German, and Italian democracies, political systems.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135.

Typically Offered

Fall

POLSC 623 - South Asian Politics

Credits 3

Analysis of selected political systems of South Asia.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135, POLSC 505, or junior standing.

Typically Offered

Fall-Odd Years

POLSC 625 - East Asian Politics

Credits 3

Comparative analysis of selected political systems in East Asia, including consideration of the democratization process in the region.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 135, or junior standing.

Typically Offered

Spring

POLSC 626 - African Politics

Credits 3

Comparative analysis of selected political systems of sub-Saharan Africa, including consideration of problems of nationalism and development.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 135, or junior standing.

Typically Offered

Other

POLSC 627 - Eastern and Central European Politics

Credits 3

Examination of comparative politics and policy in the countries of Eastern and Central Europe.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135.

Typically Offered

Spring

POLSC 628 - Civic Engagement

Credits 3

Seminar on the role of voluntary organizations and civic groups in American political life and the factors that lead citizens to participate in both electoral and non-electoral activities.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 115 and junior standing.

Typically Offered

Fall, Spring, Summer

POLSC 629 - Development Policy and Administration

Credits 3

Comparative examination of development policy, politics, and administration.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 135, POLSC 307, or POLSC 377.

Typically Offered

Fall-Odd Years

POLSC 630 - Politics of Russia and the Former Soviet Union

Credits 3

An overview of the major factors influencing the evolution of politics in Russia and the Soviet Union. Special emphasis is placed on the problems associated with the transition from a communist to a non-communist more democratic policy.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135.

Typically Offered

Spring

POLSC 638 - Ethnic Conflict

Credits 3

Ethnic Conflict in Comparative Perspective. Comparative examination of ethnic conflicts across regions with the emphasis on Africa.

Repeat for Credit

N

Requisites

Prerequisite: Sophomore standing.

Typically Offered

Spring

POLSC 642 - International Conflict

Credits 3

Examines the nature of international political conflicts and the types of such conflicts.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145.

Typically Offered

Fall, Spring, Summer

POLSC 643 - Global Human Rights**Credits 3**

Introduction to human rights in the global system with a focus on the philosophical foundations, historical evolution, institutional development, and important actors in global human rights.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145, POLSC 400.

Typically Offered

Fall, Spring, Summer

POLSC 645 - International Politics of Europe**Credits 3**

Relationships among the countries of Europe since World War II. With emphasis on efforts to create a more unified European Community. Among the organizations that will be studied are the former Warsaw Pact, NATO, the European Parliament, and the European Union.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145.

Typically Offered

Spring

POLSC 647 - International Law**Credits 3**

Theories of international law, and general problems, such as: recognition, responsibility, war crimes, sources, evidence, codification, and settlement of disputes.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145, POLSC 341, or junior standing.

Typically Offered

Other

POLSC 651 - International Organization**Credits 3**

Structure, functions, values, and effectiveness of international organizations with emphasis on the United Nations, European Union, and other regional arrangements.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145, POLSC 341, or junior standing.

Typically Offered

Other

POLSC 652 - International Politics of South Asia**Credits 3**

Study of regional problems of South Asia and of international roles and foreign policies of South Asian states.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135 or POLSC 623.

Typically Offered

Fall

POLSC 653 - International Politics of the Middle East**Credits 3**

Consideration of the Arab-Israeli conflict, inter-Arab relations, foreign policies of Middle Eastern states, and the impact of the major foreign powers on the area.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145, POLSC 135, or three hours of other social sciences.

Typically Offered

Fall

POLSC 654 - International Politics of Africa**Credits 3**

The course analyzes contemporary relations among African countries including economic and political security, border claims, formal and informal economic relations, and regional groupings. The course also examines the relations between African countries, the United States and the former Soviet Union, and between African countries and the former colonial rulers.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 135, or junior standing.

Typically Offered

Other

POLSC 655 - International Politics of Latin America**Credits 3**

Analysis of international relations of Latin America. Examining theoretical approaches to the study of Latin America's relations, U.S. Latin American relations, and comparative foreign policies of Latin American states. This course also explores special topics such as regional integration and geopolitics.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 145 or POLSC 341.

Typically Offered

Spring

POLSC 661 - Ancient and Medieval Political Thought**Credits 3**

Systematic study of ideas about law, politics, and government of great philosophers of Western civilization from Greek antiquity to the sixteenth century.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 155, or junior standing.

Typically Offered

Fall

POLSC 663 - Early Modern Political Thought**Credits 3**

Study of the development of Western political thought from the sixteenth century to the twentieth century.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 155, or POLSC 115 or junior standing.

Typically Offered

Fall

POLSC 667 - American Political Thought**Credits 3**

Political ideas underlying the American union, including the doctrine of rights, the nature of union, liberty, property, and democracy.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 155, POLSC 115 or three hours in other social sciences.

Typically Offered

Fall

POLSC 670 - Law, Politics, and Literature

Credits 3

Classic and contemporary works of literature, including novels, plays, short stories, and poems, are used to explore themes in law and politics.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 155 or junior standing.

Typically Offered

Fall, Spring, Summer

POLSC 671 - Late Modern Political Thought**Credits 3**

Study of contemporary political ideas and social thought.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 155, POLSC 115, or junior standing.

Typically Offered

Other

POLSC 675 - Religion and Politics**Credits 3**

Focuses on religious life in America and its changing relationship to politics and government. Examination of the American founding as it relates to church/ state issues, the controversy over meaning of the First Amendment's establishment and free exercise clauses, and contemporary political agendas of mainline and evangelical churches.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 115, POLSC 155 or 3 hours in other social sciences.

Typically Offered

Spring

POLSC 700 - Research Methods in Political Science**Credits 3**

Principles of research design, of measurement of political phenomena, and of methods for collecting and analyzing political data.

Repeat for Credit

N

Requisites

POLSC 115 or POLSC 400 or graduate standing, or consent of the instructor

Typically Offered

Fall

POLSC 701 - Computer and Quantitative Analysis in Political Science**Credits 3**

Advanced data management, data analysis, and computing skills involved in conducting political science and public policy research.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 400 or POLSC 700.

Typically Offered

Spring

POLSC 702 - Public Administration and Society**Credits 3**

Introduction to the discipline and profession of public administration, which may include the cultural, constitutional, institutional, organizational, and ethical context of public administration. Introduction to central issues facing public administrators, using the related perspectives of management, politics, and law.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 115 or POLSC 307 or graduate standing, or consent of the instructor

Typically Offered
Fall

POLSC 707 - Comparative Administrative Systems

Credits 3

Comparative analysis of public administration concepts and the morphology of administrative systems. Included are U.S., British, and French models and attempts by Third World countries to adapt these to their local cultures.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 135 or POLSC 307.

Typically Offered
Fall

POLSC 708 - Public Personnel Administration

Credits 3

Personnel aspects of administration at all levels of government, including recruitment, selection, discrimination law, pay, and motivation. Emphasis on those features unique to the public sector, e.g. civil service systems, public unions, and public sector ethics law.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 115, or POLSC 307 or graduate standing, or consent of the instructor

Typically Offered
Fall

POLSC 710 - Policy Analysis and Evaluation

Credits 3

Methods of policy analysis and evaluation. Includes a discussion of the relationship between public policy and the

distribution of values in society. Students analyze policies in an area of their choice; e.g., agriculture, business, health, income, trade.

Repeat for Credit
N

Requisites
Prerequisites: POLSC 115 or POLSC 400 or graduate standing, or consent of the instructor

Typically Offered
Spring

POLSC 711 - Administrative Ethics

Credits 3

Ethical issues, approaches, and strategies in public service.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 115 or POLSC 307 or graduate standing, or consent of the instructor.

Typically Offered
Fall

POLSC 712 - Game Theory for Political Scientists

Credits 3

Introduction to game theoretic models as applied to problems in American politics, international relations and comparative politics.

Repeat for Credit
N

Requisites
Prerequisite: POLSC 115, POLSC 135, POLSC 155, POLSC 145.

Typically Offered
Fall, Spring, Summer

POLSC 731 - Comparative Civil-Military Relations

Credits 3

A look at civil-military relations in the U. S., Russia, Germany, and Spain. Primary focus will be on understanding the political role of the military in totalitarian, authoritarian, and democratic states.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 110, POLSC 135, or junior standing.

Typically Offered

Fall

POLSC 734 - State and Local Government Management**Credits 3**

Examines the main operations and important issues in administering governments at the state and local levels and the similarities and differences of their environment, institutions, organizations, and processes.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Student Standing

Typically Offered

Summer

POLSC 735 - Public Organization Theory**Credits 3**

Theories of the structure and mission of public organizations. Explores the use of analytical questioning of various theories, to solve organizational problems.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 115 or POLSC 307.

Typically Offered

Fall

POLSC 736 - Strategic Management of Public and Nonprofit Organizations**Credits 3**

Strategic management in the public sector of democratic societies. Provides a set of tools and research skills to focus thinking, judgment and decision making in order to act strategically.

Repeat for Credit

N

Requisites

Prerequisite: Graduate Student Standing

Typically Offered

Spring

POLSC 737 - Public Budgeting**Credits 3**

Budgeting as apart of our political system and as a fiscal process assists in allocating scarce resources. Overview of the budgetary decision-making process and the various budgetary approaches.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 307 or MANGT 220.

Typically Offered

Fall

POLSC 738 - Public Finance**Credits 3**

Economics of the public sector, addressing the fundamental issue of the appropriate role of government activity in a market economy. Behavioral consequences of government policy. Model construction to explain real world government policymaking.

Repeat for Credit

N

Requisites

Prerequisite: POLSC 737.

Typically Offered
Fall

POLSC 739 - Intergovernmental Relations

Credits 3

Evolution of the intergovernmental system in the United States and internationally. Emphasis on federal, state, and local interrelationships.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

POLSC 740 - Nonprofit Financial Management

Credits 3

Introduction to the major issues in nonprofit management. Highlights the unique nature of the nonprofit sector with government (public) and business (for-profit) sectors. Issues may include governance roles and responsibilities, ethics and risk management, financial management and resource generation, managing staff and volunteers, performance measurements, and the emerging trends that threaten nonprofits' tax-exempt status.

Repeat for Credit
N

Requisites
Prerequisite: Graduate student standing.

Typically Offered
Fall

POLSC 754 - The Professional Diplomat and Foreign Policy Formulation

Credits 3

Present day foreign policy formulation in the United States government, including the role of professional diplomats and foreign affairs specialists in the State Department and embassies abroad, as well as within other U.S. Government agencies.

Repeat for Credit

N

Requisites
Prerequisite: POLSC 145.

Typically Offered
Fall

POLSC 756 - International Political Economy

Credits 3

The course introduces students to the political and historical dimensions of the international economy, dimensions that include trade, monetary systems, foreign investment, aid, dependency, and global interdependence. This course also examines various theories and practices of the international system, the state, bureaucracies, interest groups, international organizations, bargaining processes, and distributive norms.

Repeat for Credit
N

Requisites
Prerequisite: ECON 110 and ECON 120, POLSC 145, POLSC 135, and POLSC 341, or junior standing.

Typically Offered
Other

POLSC 775 - Teaching the Bill of Rights

Credits 1

Examines the rights protected by the United States Constitution and the ways that rights protected by the United States Constitution and the ways that rights empower citizens, limit government, and contribute to constitutional government. Explores how to teach effectively about rights.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

Crosslisted
EDCI 785

POLSC 780 - Engaged Citizens: Public Policy Issues and Processes

Credits 3

Examines the teaching of the workings of constitutional government through the lens of the public policymaking processes and the roles of individual voters, organized publics, the media, and state and local governments in that process.

Repeat for Credit

N

Typically Offered

Summer

Crosslisted

EDCI 790

POLSC 781 - Teaching the Theoretical Foundations of Constitutional Government**Credits 1**

Examines the theories (e.g., natural rights, classical republicanism, and constitutionalism) and theorists (e.g., Aristotle, Locke, Hobbes, and Montesquieu) that most influenced constitutional thinking in the United States. Explores how to teach effectively about these theories and theorists.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

EDCI 781

POLSC 782 - Teaching the Historical Origins of Constitutional Government**Credits 1**

Examines seminal ideas, documents, and events in the creation of the United States Constitution such as problems with the Articles of Confederation, the characteristics of good government, the debates at the Philadelphia Convention, the Federalist Papers, and the Antifederalist Papers. Explores how to teach effectively these ideas, document, and events.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

EDCI 782

POLSC 783 - Teaching the Development of Constitutional Principals**Credits 1**

Examines the development of political ideas and constitutional thinking since the Founding. Focuses on how the Bill of Rights, the amendment process, judicial review, and the Fourteenth Amendment are used to empower and limit government. Explores how to teach effectively about developments in constitutional thought.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

EDCI 783

POLSC 784 - Teaching the Institutions of Government**Credits 1**

Examines the powers, limits, and development of political institutions such as Congress, the President, the Supreme Court, and political parties. Explores how to teach effectively about these institutions.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

EDCI 784

POLSC 785 - Readings in Political Science**Credits 3**

Directed reading and discussion of a selected topic in political science.

Repeat for Credit
Y

Typically Offered
Fall, Spring

POLSC 787 - Teaching Citizenship

Credits 1

Examines development of the rights, responsibilities, and challenges of citizenship in the United States. Explores how to teach effectively about citizenship.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

Crosslisted
EDCI 787

POLSC 788 - Teaching the Constitutional Principles of America's Founders

Credits 3

Develops constitutional principles; explores perspectives of constitutional interpretation, change, and preservation; raises questions about the immediate and enduring significance of America's founding principles and documents; and introduces sound pedagogical practices to teach about them.

Repeat for Credit
N

Typically Offered
Fall

Crosslisted
EDCI 788

POLSC 789 - Methods and Materials in Civic Education

Credits 3

Focuses on the pedagogical aspects of civic education and engagement such as research-based approaches to concept attainment, skill development, discussion, and deliberation as well as analysis of curriculum materials and programs that apply these pedagogies.

Repeat for Credit
N

Typically Offered
Spring

Crosslisted
EDCI 789

POLSC 790 - Problems in Political Science

Credits 3

Students will complete a research project and prepare an original paper under the supervision of a faculty member.

Repeat for Credit
Y

Typically Offered
Fall, Spring

POLSC 791 - Topics in Political Science

Credits 3

Extensive exploration of a specific problem in political thought. American government, comparative politics, international relations, and public administration.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

POLSC 799 - Pro-Seminar in Political Science

Credits 3

Study and analysis in various areas of the discipline with emphasis on critical evaluation of political conflicts and issues.

Repeat for Credit

Y

Typically Offered

Fall, Spring

POLSC 800 - Seminar: Scope and Methodology of Political Science

Credits 3

Exploration of theoretical foundations of political science, and critique of various analytical models in the study of political phenomena; construction and application of research designs and techniques.

Repeat for Credit

Y

Typically Offered

Other

POLSC 805 - Seminar in American Government

Credits 3

This seminar introduces students to the methods and the theories used to study American politics. Topics to be addressed include the constitution and the American founding, political and electoral processes, institutional structure and function, and public policy. Exams and a seminar paper are required.

Repeat for Credit

Y

Typically Offered

Fall

POLSC 810 - Security Studies Methodology

Credits 2

An exploration of commonly used research methods in history and political science. Students will investigate quantitative and qualitative humanities and social sciences methodology through selected readings and limited research exercises.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

HIST 810.

POLSC 811 - Seminar in International Politics

Credits 3

The seminar introduces students to the different school of thought in international relations as well as the different methods used to study the subject. It also analyzes middle range theories on subjects such as the causes of interstate conflict, the democratic peace, and foreign policy decision-making. Exams and a seminar paper are required.

Repeat for Credit

Y

Typically Offered

Spring

POLSC 812 - Foundations of Security Studies

Credits 3

An interdisciplinary introduction to the major historical developments and scholarly approaches in the fields of military history, international relations, and security studies.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

POLSC 813 - International Security

Credits 3

Surveys traditional issues in the study of international security such as the causes of war, the utility of deterrence, coercion, and engagement, international intervention, and the proliferation of weapons of mass destruction. Attention will also be placed on security and conflict in important regional settings, such as East Asia and the Middle East.

Repeat for Credit

Y

Typically Offered

Fall

POLSC 814 - Terrorism and Transnational Security Issues**Credits 3**

Introduction to the general aspects of terrorism and counter-terrorism in order to build transnational security. The course examines these issues in terms of forms, causal factors, goals, and consequences. The main objective is to understand terrorism as part of new international security issues such as failed states, environmental degradation, demographic explosion and poverty, conflict in developing world, post-conflict reconstruction, income distribution, humanitarian emergencies, and globalization.

Repeat for Credit

Y

Typically Offered

Fall

POLSC 815 - Research Design in Security Studies**Credits 1**

An exploration of research methods in history and political science culminating in a piece of original research in Security Studies.

Repeat for Credit

Y

Requisites

Prerequisite: POLSC 810

Typically Offered

Fall, Spring

Crosslisted

HIST 815

POLSC 821 - Seminar: Political Thought**Credits 3**

A study of the history of political philosophy as well as contemporary scholarship. Political philosophy as a subdiscipline of political science and its relevance for other

subdisciplines as well as for leadership and administration. Class discussion and research training will focus on textual analysis, or exegesis. Course requirements include a major research paper.

Repeat for Credit

Y

Typically Offered

Spring

POLSC 831 - Public Administration Capstone**Credits 3**

Students integrate previous classroom learning with practical experience. Operation of a government agency on a day-to-day basis. The meaning of public service and communication in the public sector.

Repeat for Credit

N

Requisites

Prerequisite: Graduate student standing.

Typically Offered

Spring

POLSC 841 - Seminar: Comparative Politics**Credits 3**

The seminar introduces students to the methods and theories of comparative politics as well as critical analysis of various topics in political science such as institution and institutional change, social movements and state building, regime and development, political parties and electoral processes, policy making and political performance. Course requirements include two exams, book reviews, research design, and a major research paper.

Repeat for Credit

Y

Typically Offered

Fall

POLSC 842 - Seminar in Comparative Ideologies**Credits 3**

This seminar provides a graduate level exploration of ideologies such as liberalism, conservatism, socialism, communism, and fascism. The tension between ideology and philosophy is also examined.

Repeat for Credit

Y

Typically Offered

Other

POLSC 897 - Internship

Credits 1-6

Directed off-campus employment experience.

Note

Must be taken for a total of 3 hours.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

POLSC 898 - Master's Report

Credits 0-18

Master's Report

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

POLSC 899 - Master's Thesis

Credits 6

Master's Thesis

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

POLSC 900 - Advanced Research Methods I

Credits 3

The first of a two course methods sequence in security studies. Surveys the role of theory, hypotheses testing, operationalization and measurement, and research design in social science. Case study and historical methods will be given particular attention. Students will also be provided with a brief introduction to quantitative social science analysis.

Repeat for Credit

Y

Typically Offered

Fall

POLSC 901 - Advanced Research Methods II

Credits 3

The course is the second in the sequence of two method courses in security studies. It emphasized quantitative analysis in political science and covers regression analysis, violation of regression assumptions, and logit models. The course also introduces students to time series, decision theory, and game theory.

Repeat for Credit

Y

Requisites

Prerequisite: POLSC 900.

Typically Offered

Spring

POLSC 985 - Readings in Security Studies

Credits 1-6

Directed reading and discussion of a selected topic in international security.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

POLSC 991 - Topics in Security Studies

Credits 3

Exploration of a specific issue in one of the fields or areas of international security.

Note

Specific topics will be listed in the class schedule for the semester in which they are offered.

Repeat for Credit

Y

Requisites

Prerequisite: POLSC 900 and POLSC 901.

Typically Offered

Fall, Spring, Summer

POLSC 999 - PhD Research in Security Studies

Credits 1-15

PhD research culminating in completed PhD dissertation.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PORT 572 - Special Studies in Portuguese

Credits 1-3

Special Studies in Portuguese

Repeat for Credit

N

Requisites

Prerequisite: 15 hours of Portuguese and consent of instructor.

Typically Offered

Other

PPIL 101 - FAA Pilot Certificate Validation

Credits 1-4

Flight and knowledge validation of FAA pilot certificates.

Repeat for Credit

N

Requisites

Prerequisite: Instructor permission.

Typically Offered

Fall, Spring, Summer

PPIL 108 - Private Pilot Flight Lab Solo

Credits 0.5

This course provides students with basic flight knowledge and fundamentals for solo flight as outlined by the Federal Aviation Administration (FAA). The successful completion of this course is the solo stage check.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 111

Typically Offered

Fall, Spring, Summer

PPIL 110 - Private Pilot Flight Lab Certification

Credits 0.5

A continuation of PPIL 108 after solo flight and stage check. Upon completion of the course, students will meet the requirements for the FAA Private Pilot Certificate.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 108

Corequisite: PPIL 111

Typically Offered

Fall, Spring, Summer

PPIL 111 - Private Pilot

Credits 4

The subject areas necessary for completion and passing of the FAA Private Pilot Knowledge Test are presented.

Note

Four hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 112 - Professional Instrument Pilot**Credits 3**

A study of the procedures, regulations, and techniques required to safely fly in instrument meteorological conditions within our national airspace system. The course will prepare the student to pass the FAA Instrument Airplane Knowledge Test.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111

Corequisite: MATH 100.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 113 - Private Pilot Flight Lab**Credits 1**

An introduction of the fundamentals of flight. Solo flights to include all flight operations and maneuvers necessary for meeting the aeronautical experience for the FAA Private Pilot Certificate.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 111.

Typically Offered

Fall, Spring, Summer

PPIL 114 - Professional Instrument Pilot Flight Lab**Credits 1**

Instructional flight training necessary to maneuver the aircraft safely in actual or simulated instrument meteorological conditions within the national airspace system.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111, PPIL 113. Corequisite: PPIL 112.

Typically Offered

Fall, Spring, Summer

PPIL 196 - VFR Pilot Proficiency Lab**Credits 1**

Instruction and flight training necessary to safely operate an aircraft to meet the Federal Aviation Regulations. This course provides the student the opportunity to review and demonstrate proficiency to satisfactorily meet the FAA regulations for the current ratings held.

Note: Successful completion will result in a flight review required by FAR 61.56.

Note

Please add to description: Successful completion will result in a flight review required by FAR 61.56.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PPIL 197 - IFR Pilot Proficiency Lab

Credits 1

Instruction, simulator, and flight training necessary to safely operate an aircraft, to meet and maintain the Federal Aviation Regulations currency requirement of Instrument Competency, and maintain instrument currency and proficiency.

Note: Successful completion will result in an Instrument Proficiency Check (IPC) required by FAR 61.57d.

Note

Catalog change only

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PPIL 210 - Aviation Safety

Credits 3

This course provides an introduction to the field of aviation safety with an emphasis on promoting a safety culture. Various safety programs and their relevance in the field of aviation are discussed. Students will examine numerous accident reports and discuss safety issues facing the aviation industry today.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PPIL 211 - Professional Commercial Pilot

Credits 3

The subject areas necessary for passing the FAA Commercial Pilot Knowledge Test.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 112, PPIL 114.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 212 - Professional Commercial Pilot Flight Lab I

Credits 2

Instructional cross country flight training necessary to maneuver the aircraft safely in actual or simulated instrument meteorological conditions within the national airspace system.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 112, PPIL 114. Corequisite: PPIL 211.

Typically Offered

Fall, Spring, Summer

PPIL 213 - Professional Commercial Pilot Flight Lab II

Credits 2

An introduction to complex airplane operations and a review of those operations required of a commercial pilot. The completion of this course readies the student to take the commercial FAA Practical test.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 212.

Typically Offered
Fall, Spring, Summer

PPIL 214 - Extended Cross Country

Credits 1

A characteristic of aviation is that aircraft can cover a large geographic area. Aircraft operations in other geographic areas may differ greatly from a student's training base. The experience of long-range navigation can be a great learning experience as well as a confidence booster. Selection of a destination that allows the student to increase their knowledge of aviation also aids in producing a more well-rounded, responsible professional.

Repeat for Credit
N

Requisites
Prerequisite: PPIL 113.

Typically Offered
Other

PPIL 215 - Mountain Flying

Credits 1

A characteristic of aviation is that aircraft can cover a large geographic area. Aircraft operations in mountainous areas may differ greatly from a student's training. The experience of reduced aircraft performance caused by high-density altitudes can be a great training into operations with aircraft exhibiting marginal performance. Learning of weather patterns, hypoxia, and survival allows the student to increase their knowledge of aviation and also aids in producing a more well-rounded, responsible professional.

Repeat for Credit
N

Requisites
Prerequisite: PPIL 114 and instructor consent.

Typically Offered
On sufficient demand

PPIL 216 - Altitude Chamber

Credits 1

This course offers a 1-day aviation physiology course for civil aviation pilots through the CAMI's Aeromedical Education Division in Oklahoma City, OK. In addition to the basic academic contents, this course offers practical demonstrations of rapid decompression and hypoxia in a hypobaric chamber, as well as a practical demonstration of spatial disorientation. Upon completion of the course students will receive a certificate noting that they have completed the FAA's Physiological Training course. The FFA requires a current Aviation Medical Certificate.

Repeat for Credit
N

Typically Offered
Fall, Spring

PPIL 217 - Glider Towing

Credits 1

Instruction and flight training necessary to obtain a logbook endorsement in the techniques and procedures for the safe towing of gliders.

Repeat for Credit
N

Requisites
Prerequisite: PPIL 113.

Typically Offered
Fall

PPIL 219 - Single Engine Seaplane Transition

Credits 1

Instruction and flight training necessary to add the seaplane rating to the commercial pilot certificate. Course requires a one-week trip to a specified contract training location.

Note
One hour lecture a week.

Repeat for Credit
N

Requisites
Prerequisite: PPIL 213.

Typically Offered
Spring

PPIL 221 - Preventive Maintenance

Credits 2

This course will give the student hands-on experience with the maintenance tasks allowed under FAR 43 entitled preventive maintenance.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PPIL 230 - Private Pilot Glider Transition

Credits 1

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of glider aircraft that will lead to an Private Pilot Glider certificate. This course provides students the opportunity to enhance and develop their skills in this segment of aviation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 113.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 231 - Commercial Pilot Glider Transition

Credits 1

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of glider aircraft that will lead to a commercial pilot glider certificate. This course provides students the opportunity to enhance and develop their skills in this segment of aviation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213 and PPIL 230.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 262 - Multi-Engine Ground School

Credits 1

Ground instruction covering multi-engine aircraft to develop the aeronautical knowledge to meet the ground school requirements for a multi-engine land class rating.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211.

Typically Offered

Fall, Spring, Summer

PPIL 263 - Multi-Engine Flight Lab

Credits 1

Flight instruction and experience in a multi-engine aircraft to develop the aeronautical skills to meet the requirements to add a multi-engine land class rating to the student's existing pilot certificate.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 262.

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

PPIL 290 - Multi-Engine Crew Coordination

Credits 1

Instruction, simulator and flight training necessary to operate a multi-engine aircraft as a member of a crew. Enhances multi-engine, instrument and cross country skills.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211, PPIL 263.

Typically Offered

Other

PPIL 295 - Tailwheel Transition

Credits 1

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of conventional-gear (tailwheel) aircraft that will lead to an endorsement allowing the student to act as pilot-in-command. This course provides students the opportunity to enhance and develop their skills in this segment of aviation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 113.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 296 - Complex/High Performance Transition

Credits 1

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of complex/high performance aircraft that will lead to endorsements allowing the student to act as pilot-in-command. This course provides students the opportunity to enhance and develop their skills.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211

Typically Offered

Fall, Spring, Summer

PPIL 310 - Fundamentals of Instruction/Advanced Ground Instructor Ground School

Credits 3

This course will prepare the student for the Federal Aviation Administration (FAA) Fundamentals of Instruction (FOI) and Advanced Ground Instructor (AGI) Knowledge Tests.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211

Typically Offered

Fall, Spring

PPIL 311 - Certificated Flight Instructor-Airplane Ground School

Credits 3

Instruction techniques, practices, and procedures necessary to provide skill in organizing and presenting lessons. This course will prepare the student for the FAA Certificated Flight Instructor-Airplane practical test and the Flight Instructor Airplane (FIA) Knowledge Test.

Repeat for Credit

N

Requisites

Co-requisite: PPIL 213 and PPIL 310

Typically Offered

Fall, Spring

PPIL 312 - Certified Flight Instructor Ground School

Credits 6

Instruction techniques, practices, and procedures necessary to provide skill in organizing and presenting lessons. This course will prepare the student for the FAA Certified Instructor Knowledge Test.

Note

Six hours recitation a week.

Repeat for Credit

N

Requisites

Co-requisite: PPIL 213.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 314 - Certified Flight Instructor Flight Lab**Credits 2**

The needed flight skills and proper display of teaching ability will be emphasized. The demonstration of flight maneuvers with recognition of common errors in students performing the demonstrated maneuvers is stressed.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213. Concurrent enrollment: PPIL 311 or PPIL 312.

Typically Offered

Fall, Spring, Summer

PPIL 325 - Advanced Aircraft Systems**Credits 3**

Electrical, environmental, hydraulic, fuel, ignition, and lubrication systems, including theory of operation and

calculations. Principles, systems, analysis, operation, and limitations of advanced electronic navigation, flight director, and automatic flight control systems, including Inertial Navigation Systems and GPS.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PPIL 379 - Turbine Transition**Credits 3**

To provide required knowledge to meet FAA requirements to operate as second-in-command in KSU transportation aircraft. Covers systems performance and emergency procedures for turbine aircraft. In conjunction with simulator training, students will be qualified to operate as co-pilots on university transportation trips.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PPIL 385 - Airline Transport Pilot Rating**Credits 2**

Provides the student with the aeronautical knowledge necessary to prepare for the FAA Airline Transport Pilot Knowledge Test. The demonstration of flight maneuvers, with recognition of proper control of emergencies in compliance of the Airline Transport Pilot Practical Test

Standards will be stressed.

Note

One hour lecture and three hours lab a week.

Repeat for Credit

N

Typically Offered

Other

PPIL 387 - Crew Resource Management I

Credits 3

This course involves using all available resources for a safe and efficient flight. Aircraft crew performance is reviewed to include the background and philosophy of Crew Resource Management (CRM) communication, decision behavior, team building, workload management, and situational awareness. Students accomplish two flight scenarios using modern advanced jet aircraft training device.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 262, PPIL 325.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

PPIL 389 - Problems in Aviation

Credits 1-18

To provide the student an opportunity to apply aviation education to the improvement of skills previously learned as designated by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PPIL 396 - Introduction to Upset Training and Recovery

Credits 1

Instruction and flight training necessary to develop an understanding and flight proficiency in basic upset flight attitudes. This course provides the student the opportunity to develop a better understanding of aircraft and safety of flight in other than normal flight attitudes.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 114.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 416 - Crew Resource Management II

Credits 3

Utilizing a modern advanced jet aircraft training device, special emphasis is placed on systems knowledge, Flight Management Systems (FMS) programming, flight profiles and cockpit flows. Students fly Line Orientated Flight Training (LOFT) missions and self-critique their performance.

Note

One hour lecture and five hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 387 and AVT 340.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

PPIL 482 - Certified Instrument Flight Instructor Ground School

Credits 1

Instrument instruction techniques, practices, and procedures necessary to provide skills in organizing and presenting lessons in instrument flying procedures. This course will prepare the student for the FAA Certified Instrument Flight Instructor knowledge test.

Note

One hour recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 311 or PPIL 312.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PPIL 483 - Certified Instrument Flight Instructor Lab

Credits 1

Instrument instruction techniques, practices, and procedures necessary to provide skills in organizing and presenting lessons in instrument flying procedures. This course will prepare the student for the FAA Certified Instrument Flight Instructor practical test.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 314. Prerequisite or corequisite: PPIL 482.

Typically Offered

Fall, Spring, Summer

PPIL 492 - Certified Multi-Engine Flight Instructor Ground School

Credits 1

Provides the student with the aeronautical knowledge necessary to meet the requirements for the addition of an airplane, multi-engine rating to the flight instructor certificate.

Note

One hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 311 or PPIL 312, PPIL 314.

Typically Offered

Fall, Spring

PPIL 493 - Certified Multi-Engine Flight Instructor Lab

Credits 1

Provides the student with the aeronautical skills and experience necessary to meet the requirements for the addition of an airplane, multi-engine rating to the flight instructor certificate.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 314. Prerequisite or corequisite: PPIL 492.

Typically Offered

Fall, Spring, Summer

PSYCH 110 - General Psychology

Credits 3

An introductory survey of the general content areas of psychology, including methods, data and principles.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 115 - General Psychology (Honors)

Credits 4

An introductory survey of the general content areas of psychology, including methods, data and principles.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 120 - Psychology of College Success

Credits 3

Apply psychological techniques to succeed in college. Psychological theories and techniques related to cognition, social behavior and emotional well-being are covered. Students will discuss the science behind topics that are relevant to academic performance, belonging, and well-being, such as learning, motivation, self-control, culture, relationships, health, and happiness.

Repeat for Credit

N

Typically Offered

Fall or Spring

K-State 8

Social Sciences

PSYCH 202 - Drugs and Behavior

Credits 3

Effects of drugs on human performance, cognition, and physiological processes will be discussed and the empirical evidence surveyed and critically evaluated in relation to

both use and abuse of drugs in society.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

PSYCH 270 - Brain Myths: Fact or Fiction?

Credits 3

Introduction to the basic principles of brain function and neuroscience methodology. Popular press and peer reviewed scientific literature will be critically evaluated to develop scientific literacy skills.

Repeat for Credit

N

Requisites

PSYCH 110 or instructor permission

Typically Offered

Fall, Spring

PSYCH 280 - Psychology of Childhood and Adolescence

Credits 3

Survey of behavioral development from birth through adolescence.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 290 - Innovative Studies in Psychology

Credits 1-6

Topics selected in consultation with the instructor. To be used for interdisciplinary and innovative approaches to psychological topics.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Social Sciences

PSYCH 310 - Controversial Issues in Psychology Research

Credits 3

Covers selected topics across areas of physiological psychology, human development, cognitive and social psychology, and mental health disorders and their treatment. Students will explore in greater depth several controversial ideas and concepts in contemporary psychology.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

PSYCH 350 - Experimental Methods in Psychology

Credits 3

Introduction to basic principles of research design and scientific methodology as applied to psychological sciences.

Repeat for Credit

N

Requisites

Prerequisite: Psych 110, Psych Major or Minor, Sophomore standing

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PSYCH 351 - Experimental Methods Laboratory

Credits 2

Application of experimental design and data analysis emphasized in the psychological literature, procedures, and reporting of research findings.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350.

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PSYCH 370 - Introduction to Behavioral Neuroscience

Credits 3

A general overview of human brain function using case studies as a primary means for understanding the relationship between behavior and brain mechanisms.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

PSYCH 399 - Honors Seminar in Psychology**Credits 3**

Selected topics.

Note

Open to non-majors in the honors program.

Repeat for Credit

Y

Typically Offered

Fall, Spring

K-State 8

Social Sciences

PSYCH 400 - Practicum in Teaching Psychology**Credits 1-4**

Supervised experience in presentation of psychological concepts in various classes. May be taken only with approval of the instructor of a psychology class under whose supervision the student will obtain this experience.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor; nine hours of psychology including PSYCH 110; junior standing.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

PSYCH 425 - Judgment and Decision Making**Credits 3**

Covers the academic field of judgment and decision making, its major methods, results, and controversies. Examines the generality of experimental results across various domains including gambling, clinical prediction, perception of randomness, and legal and medical decision making. Focus on practical analytical skills for decision making that are useful in everyday life and work.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 430 - Forensic Psychology**Credits 3**

Survey of psychological principles and facts in areas such as perception, cognition, neuropsychology, social psychology, personality, and decision making, as they apply to forensic psychology. Topics include: polygraph (lie detection), eyewitness testimony, jury decision making, and profiling.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 450 - Applications of Memory

Credits 3

Examination of the applications of memory in such diverse areas as courtroom testimony, expert performance, mnemonic procedures, and advertising. Relevant theories and research in each area are examined.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

K-State 8

Social Sciences

PSYCH 460 - Cognitive Psychology

Credits 3

A survey of the manner in which people extract and use relevant information from their environment as a basis for behavior. Topics may include memory storage and retrieval, attention, imagery, mnemonic devices, decision making, and other cognitive processes.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 (Psychology majors only).

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 465 - Cognitive Neuroscience

Credits 3

The foundations of the neural bases of cognition and human behavior. A focus on neuroanatomy, hemispheric specialization, brain development, and higher-order cognitive functions, such as language, executive functions,

attention, learning, and memory. Additional topics include cutting-edge brain imaging techniques (e.g., electroencephalography, functional MRI, and brain stimulation), lesion studies and examinations of brain injuries and other neurological disorders.

Repeat for Credit

N

Requisites

PSYCH 110 or instructor permission

Typically Offered

Fall, Spring, Summer

PSYCH 470 - Principles of Neuroscience

Credits 3

A more in-depth course on brain-behavior interactions. Topics include: neuroanatomy, neuron transmission, sensory systems, emotions and stress, learning and memory, sleep, language and neural disorders.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 101 or BIOL 198, PSYCH 110.

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

PSYCH 475 - Principles of Learning

Credits 3

Introduction to the principles of learning and their relevance to the understanding of the behavior of animals and humans.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 (Psychology majors only).

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PSYCH 480 - Fundamentals of Perception and Sensation

Credits 3

Empirical and theoretical approaches to phenomena of sensation and perception.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 (Psychology majors only).

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PSYCH 490 - Honors Tutorial in Psychology

Credits 1-3

Individual directed research and study of a topic in psychology, normally as a preliminary to writing a senior honors thesis.

Repeat for Credit

Y

Requisites

Prerequisite: Sophomore standing, membership in the honors program of the College of Arts and Sciences, and permission of instructor.

Typically Offered

Fall, Spring

K-State 8

Social Sciences

PSYCH 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

PSYCH 500 - Junior Seminar in Psychology

Credits 1

Discussion of professional, research, and educational methods and objectives in psychology. Acquaints psychology majors with psychology as a profession, and with the various options available to them at various levels of training.

Repeat for Credit

N

Requisites

Prerequisite: Psych/Pre-Psych Major; Junior standing.

Typically Offered

Fall

PSYCH 505 - Introduction to Psychopathology

Credits 3

An introductory study of behavior pathologies, with emphasis on their etiology and treatment.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing; PSYCH 110.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 510 - Introduction to Behavior Modification**Credits 3**

Study of the principles of behavior modification and applications to human behavior. Emphasis on the learning principles and research in behavior modification.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 505.

Typically Offered

Spring

PSYCH 515 - Introduction to Psychology Applied to Work**Credits 3**

Introduction to the basic theories and practices used by industrial and organizational psychologists to enhance individual and organizational effectiveness and well-being. Topics include personnel selection, training, performance management, job attitudes, work motivation, leadership, occupational health, and group processes at work.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

PSYCH 518 - Introduction to Health Psychology**Credits 3**

Psychosocial factors relevant to general health maintenance, recovery from disease or injury, and the achievement of health. Topics include stress-management techniques, personality characteristics associated with disease, cognitive-emotional effects of diet and exercise, and theories of pain and pain management. Concepts of prevention and behavioral medicine are also included.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

PSYCH 520 - Life Span Personality Development**Credits 3**

Theories and research in the development of personality from infancy through old age. Origins of personality in heredity and early experience, socialization practices, life crises and choices at various stages throughout life, and problems of aging.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110; sophomore standing.

Typically Offered

Fall, Spring, Summer

PSYCH 530 - Psychology of Mass Communications

Credits 3

The psychological effects of mass communication on behavior and thought, including advertising, stereotyping of women and minorities, effects on children, violence and sex in the media, effects of news on behavior, and the promotion of prosocial behavior through the media.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

PSYCH 535 - Social Psychology**Credits 3**

Psychology of the individual in society. Survey of empirical studies and theoretical models of social perception, attitudes, and social behavior (e.g., attribution, ethnic and gender prejudice, conformity). Relationship of these topics to personal and media influence, social mores, and social systems is also included.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

PSYCH 538 - Cross-Culture Psychology**Credits 3**

Introduction to general theories and methods related to understanding the role of culture in human psychology. Focus is on how human psychology and behaviors both differ and are consistent across cultures, and

sometimes within subcultures. Topics may include perception, cognitive processes, development, emotions and nonverbal behavior, personality and gender, social relationships, judgments of morality, and mental illness.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PSYCH 540 - Psychology of Gender**Credits 3**

Investigation of psychological processes involved in gender with emphasis on development and major life events.

Topics include physiology, early socialization into sex/gender roles, friendship, achievement, motivation, sexuality, romantic relationships, family development, work, and mental health.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

PSYCH 545 - Consumer Psychology**Credits 3**

Survey of psychological principles and facts in perception, learning, attitude formation, personality, etc., as they apply to behavior of consumers.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall

PSYCH 550 - Advanced Psychological Research Methods**Credits 4**

Students will read primary literature, design research studies, employ the instruments and technology currently used in psychological research.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350, STAT 225 or equivalent.

Corequisite: Majors only, Grade of B or better in PSYCH 350.

Typically Offered

Fall, Spring

PSYCH 556 - Multicultural Psychology**Credits 3**

Introduce and familiarize students with the concept of multicultural psychology.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

PSYCH 557 - The Psychology of Ethnic Humor**Credits 3**

Reviews the structure, dynamics, and social functions of ethnic humor.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110 or SOCIO 211.

Typically Offered

Summer

PSYCH 559 - Psychological Testing**Credits 3**

Principles of psychological testing in industrial, clinical/ counseling, and research environments. Topics include technical issues such as reliability, validity, norming, selection, placement, discrimination, etc. Also covers procedures for selecting, administering, and interpreting psychological tests.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

PSYCH 560 - Personnel Psychology**Credits 3**

An exploration of the industrial aspect of the industrial/organizational psychology discipline and provides an overview of human behaviors and psychological principles in personnel and selection contexts. Topics include recruiting, selecting, assessing, and training personnel; evaluating job performance; conducting job analyses; and implementing human capital strategies.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Summer

K-State 8

Social Sciences

K-State 8 Tag 2

Empirical and Quantitative Reasoning

PSYCH 563 - Gender Issues in the Workplace**Credits 3**

Psychological experiences of women and men in the world of work, with emphasis on traditional and nontraditional sex-role behavior, sexual discrimination and harassment, and relevant socialization experiences.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall

PSYCH 564 - Psychology of the Workplace**Credits 3**

An exploration of organizational aspect of the industrial/organizational psychology discipline and provides coverage of relationships between individuals, groups, and organizations; how organizational factors contribute to individual behavior; and how individuals affect groups and organizational functioning. Emphasis on traditional topics such as work motivation, job satisfaction and other attitudes, leadership, communication, socialization, and organization and job design.

Note

500-level psychology courses cannot be taken for graduate

credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Spring

K-State 8

Social Sciences

K-State 8 Tag 2

Empirical and Quantitative Reasoning

PSYCH 565 - Occupational Health Psychology**Credits 3**

Survey of occupational health issues for juniors and seniors. Provides students with a background in psychologically related health issues occurring at work. The basic processes for identification, prevention, treatment, and well being of workers will be identified and explored.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110.

Typically Offered

Fall, Spring

PSYCH 570 - Psychopharmacology**Credits 3**

Survey of basic principles of neural communication and pharmacology, the etiology and bio-behavioral bases of substance abuse, and chemical treatments of psychiatric disorders.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 202, PSYCH 470.

Typically Offered

Spring

PSYCH 575 - History of Psychology**Credits 3**

A survey of the people and intellectual movements that shaped the emergence and growth of modern psychology. Topics covered include early philosophy and founders of psychology, Gestalt movement, Behaviorism, applied psychology, and clinical/counseling psychology.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110 or permission of instructor

Typically Offered

Spring

PSYCH 580 - Psychology of Sexual Behavior**Credits 3**

Study of psychological determinants and consequences of human sexual behavior; roles of personality, attitudinal and emotional factors will be emphasized.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110, sophomore standing.

Typically Offered

Fall, Spring

PSYCH 584 - Group Psychotherapy**Credits 3**

Principles of psychoeducational training, strategies, and group norms. The group experience is practiced within the classroom, offering experience as both a group member and a group leader through role-playing and experiential exercises. Research and program planning are conducted to create and guide a psychoeducational group.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110

Typically Offered

Fall, Spring

PSYCH 585 - Basic Concepts of Clinical Psychology**Credits 3**

Critical analysis of the profession. Review of theoretical and empirical bases of such areas as intelligence and its measurement, personality and diagnosis, psychotherapy, and other modes of behavioral change.

Note

500-level psychology courses cannot be taken for graduate credit by students in psychology graduate programs.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110, PSYCH 505, and 3 additional hours of psychology.

Typically Offered

Spring

PSYCH 586 - Psychology Internship Readiness**Credits 1**

Exploration of the efficacy of decisions and actions within a professional internship. The topics of professional communication, dress, engagement, timeliness, and conflict resolution will prepare the student for an internship. Additionally, ethics, confidentiality, the duty to warn and self-care impacting the delivery of human services will be explained.

Note

This course must be taken in preparation for PSYCH 587.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110

Typically Offered

Fall, Spring, Summer

PSYCH 587 - Psychology Internship in Mental Health**Credits 1-6**

Supervised internship in an agency or institutional setting in the application of psychological techniques to individuals, groups, or organizations. Regular supervision emphasizes relationship between theory and application and the evaluation of outcomes.

Repeat for Credit

Y

Requisites

Prerequisite: PSYCH 585 and PSYCH 586 and consent of PSYCH 586 instructor

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PSYCH 590 - Interdisciplinary Topics in Psychology**Credits 1-3**

Topics selected in consultation with the instructor, covering interdisciplinary and innovative approaches to psychological topics. Topics selected in consultation with the instructor, covering interdisciplinary and innovative approaches to psychological topics.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PSYCH 595 - Behavioral Neuroscience Lab Skills**Credits 3**

Provides practical training in the foundations of Behavioral Neuroscience, which is the study of the biological basis of behavior in animals. Students will engage in theoretical work and practical experiments addressing behavioral and physiological processes as well as relationships between different biological and behavioral processes in various species.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110; PSYCH 370 or PSYCH 470

Typically Offered

Fall, Spring, Summer

PSYCH 596 - Cognitive Neuroscience Lab Skills**Credits 3**

Provides practical training in the foundations of Cognitive Neuroscience, which is the science of the human brain and behavior. Students will engage in theoretical work and practical experiments addressing behavioral, cognitive, and physiological processes as well as relationships between different biological and behavioral processes.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110; PSYCH 465

Typically Offered

Fall, Spring, Summer

PSYCH 598 - Research in Neuroscience**Credits 0-18**

Investigation of selected problems within the area of neuroscience.

Note

May be repeated. Consent of instructor.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

PSYCH 599 - Research in Psychology

Credits 0-18

Investigation of selected problems.

Note
Consent of instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring, Summer

PSYCH 605 - Advanced Social Psychology

Credits 3

An advanced look at some of the core topics in social psychology (e.g. the self, social influence, personal relationships, prejudice and discrimination, group processes) with a strong emphasis on applying the theory in these areas to current social problems and students' daily lives.

Repeat for Credit
N

Requisites
Prerequisite: PSYCH 350 (Psychology majors only).

Typically Offered
Spring

PSYCH 620 - Psychology of Personality

Credits 3

Discussion of different approaches to the study of personality.

Repeat for Credit
N

Requisites
Prerequisite: PSYCH 350.

Typically Offered
Fall

PSYCH 625 - Human Factors Psychology

Credits 3

The application of psychological principles to the design and operation of machines, products, and systems, including human-computer interactions, automation, and training.

Repeat for Credit
N

Requisites
Prerequisite: PSYCH 110; STAT 225-799

Typically Offered
Fall

K-State 8
Empirical and Quantitative Reasoning
K-State 8 Tag 2
Social Sciences

PSYCH 630 - Human Neuropsychology

Credits 3

Study of brain-behavior relationships in humans. Brief review of human neuroanatomy followed by a major emphasis on brain function in learning, memory, language, and other cognitive behaviors. Also includes an examination of behavioral alterations following brain damage.

Repeat for Credit
N

Requisites
Prerequisite: BIOL 198 and PSYCH 110, or BIOL 101 and PSYCH 110.

Typically Offered
Spring

PSYCH 650 - Psychology of Language

Credits 3

Experimental study of language, including sentence comprehension and memory, language acquisition and development, speech perception, and effects of context, perception, reasoning, and linguistic structure on processing of language.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110 and junior standing.

Typically Offered

Fall

PSYCH 670 - Neural Mechanisms of Learning and Memory

Credits 3

Survey of topics on the neurobiology of learning and memory including memory formation and maintenance, long term potentiation, and the role of various brain areas involved in memory such as the hippocampus and corticostriatal circuits. Discussions of relevant research articles and current topics in the neuroscience of learning and memory.

Repeat for Credit

N

Requisites

Prerequisites: PSYCH 110, BIOL 101 or BIOL 198

Typically Offered

Fall, Spring, Summer

PSYCH 715 - Psychology of Aging

Credits 3

The psychological aspects of human aging. An analysis of the contributions of experimental, developmental, and personality-social psychology to the study of aging. The psychopathology of aging and psychological intervention strategies are also covered.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110 and junior standing.

Typically Offered

Spring

PSYCH 790 - Topics in Psychology

Credits 1-18

Topics in Psychology

Repeat for Credit

Y

Requisites

Prerequisite: PSYCH 110 and consent of instructor.

Typically Offered

Fall, Spring, Summer

PSYCH 799 - Problems in Psychology

Credits 1-18

Problems in Psychology

Repeat for Credit

Y

Requisites

Prerequisite: PSYCH 110 and consent of instructor.

Typically Offered

Fall, Spring, Summer

PSYCH 802 - Psychological Research Design and Analysis I

Credits 3

Introduction to techniques of research planning and design, including critical evaluation of psychological research practices and selected research studies.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 or equivalent, and Psychology major or consent of instructor.

Typically Offered

Fall

PSYCH 803 - Physiological Psychology

Credits 3

An advanced survey of basic technique, theory, and research in the field of behavioral neuroscience, including

memory and learning, sensory and motor processes, motivation, and sexual behavior.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198 and PSYCH 110.

Typically Offered

Fall

PSYCH 804 - Industrial/Organizational Psychology

Credits 3

Advanced survey of theory and research pertaining to human behavior in work organizations. Topics include selection, training, and evaluation of employees, job analysis and evaluation, work motivation and satisfaction, organizational structure and development, and working conditions.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 560 or PSYCH 564.

Typically Offered

Fall

PSYCH 805 - Psychological Research Design and Analysis II

Credits 3

Extensive coverage of repeated measures designs, advanced experimental design, and the treatment of common psychological measures.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 802 with a grade of B or better.

Typically Offered

Spring

PSYCH 806 - Psychological Measurement

Credits 3

The logic and methodology underlying the construction of psychological measuring instruments from the psychophysical estimate of threshold to the scaling of complex psychological variables.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 110 and STAT 225.

Typically Offered

Fall

PSYCH 807 - Research Methods in Occupational Health Psychology

Credits 3

Reviews research methods used in social science with emphasis on occupational health psychology issues.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225.

Typically Offered

Fall

PSYCH 808 - Applied Research Methods

Credits 3

Examines research methods and analyses that are used in the applied psychology literature. Focuses on planning and conducting program evaluation.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225.

Typically Offered

Spring-Even Years

PSYCH 809 - Applied Research Methods II

Credits 3

Provides students with a detailed knowledge of human resource management research methods and analyses. Focuses on how to plan and conduct research in industrial/organizational psychology. Preparation for the M.S. practicum.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 808.

Typically Offered

Summer

PSYCH 810 - Learning**Credits 3**

In-depth study of empirical and theoretical research on basic learning principles and their effects on behavior.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 or equivalent.

Typically Offered

Spring

PSYCH 812 - Perception**Credits 3**

Various systematic approaches to perception, with emphasis on experimental and quantitative data. The role of perception in affectivity, motivation, and personality theory is stressed.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 or equivalent.

Typically Offered

Spring

PSYCH 814 - Advanced Cognitive Psychology**Credits 3**

Study of contemporary trends and research in cognition, including memory, language, problem solving, decision making, and human learning.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 or equivalent.

Typically Offered

Fall

PSYCH 816 - Psychology of Health**Credits 3**

Presents psychological research investigating illness and related dysfunction, as well as the promotion and maintenance of health. Provides students with the theoretical, empirical and clinical aspects of health psychology from a number of perspectives, discusses leading research and explores personal and practical implications of this information.

Repeat for Credit

N

Typically Offered

Fall

PSYCH 820 - Personality Theory and Research**Credits 3**

A comparative examination of contemporary theories of personality as well as research findings relevant to such theories.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 620 or equivalent.

Typically Offered

Spring

PSYCH 822 - Developmental Psychology

Credits 3

Human psychological development throughout the lifespan.
Examination of major theoretical systems relevant to
Developmental Psychology.

Note

Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall, Spring

PSYCH 825 - Judgmental Processes**Credits 3**

Examination of empirical findings and theoretical
approaches to decision making and judgment with
emphasis on higher cognitive processes.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 and PSYCH 802.

Typically Offered

Fall

**PSYCH 830 - Pro-Seminar in Social
Psychology****Credits 3**

Discussion of empirical findings and theoretical approaches
to selected problem areas, such as attitude change,
personality and social structure, person perception, small
group processes.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 535.

Typically Offered

Fall

**PSYCH 840 - Proseminar in Occupational
Health Psychology****Credits 3**

Survey of occupational health issues for first or second year
graduate students in health and related fields.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225.

Typically Offered

Fall-Odd Years

**PSYCH 841 - Seminar in Occupational Health
Behaviors****Credits 3**

Focuses on organizational and individual prevention and
coping behaviors relevant to work-related health problems.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 840.

Typically Offered

Fall-Even Years

**PSYCH 842 - Practicum in Occupational
Health Psychology****Credits 3**

Provides supervised practical experience with occupational
health problems in various business, manufacturing and
government settings. Students will prepare evaluative
analyses of their assigned sites.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 840 and PSYCH 841.

Typically Offered

Spring-Odd Years

**PSYCH 850 - Current Issues in Health
Psychology**

Credits 1

Introduction to current issues in health psychology research.

Note

Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall, Spring

PSYCH 851 - Practicum in Health Psych**Credits 3**

Independent health research designed in conjunction with major faculty advisor plus another faculty member to produce a journal submission and departmental presentation.

Note

Consent of instructor.

Repeat for Credit

N

Typically Offered

Fall, Spring

PSYCH 853 - Seminar in Psychopharmacology**Credits 3**

Surveys basic principles of neural communication and pharmacology, the etiology and bio-behavioral bases of substance abuse, and chemical treatment of psychiatric disorders.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring

PSYCH 860 - Practicum in Psychology**Credits 1-18**

Supervised practical experience in applied psychology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PSYCH 870 - Practicum in Teaching Psychology**Credits 1-4**

Supervised experience regularly teaching a college psychology course.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing in Department of Psychology.

Typically Offered

Fall, Spring

PSYCH 875 - Industrial Psychology: Personnel Training**Credits 3**

An examination of the training of personnel in an organization. Topics include: determination of an organization's training needs, selection and motivation of trainees, design and evaluation of training programs, and examination of several specific strategies for accomplishing the training function.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 560 or equivalent.

Typically Offered

Spring

PSYCH 876 - Industrial Psychology: Work Motivation

Credits 3

An examination of empirical findings and theoretical approaches to understanding the relationship between worker motivation and job outcomes.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 564 or GENBA 520.

Typically Offered

Fall

PSYCH 877 - Industrial Psychology: Leadership

Credits 3

Examination of current leadership theories, research, and practice in the work setting, focusing on situational approaches to leadership, leadership styles, and interactions between personal characteristics and organizational factors.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 564 or equivalent.

Typically Offered

Fall

PSYCH 878 - Industrial Psychology: Personnel Selection

Credits 3

Examination of theoretical and practical issues in staffing industrial organizations, including recruitment, test validation, and other equal employment opportunity issues (test fairness, adverse impact, etc.).

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 560 or equivalent.

Typically Offered

Spring

PSYCH 879 - Organizational Psychology

Credits 3

An examination of the individual's role in industrial organizations and the effects of organizational variables on the individual worker. Topics include organizational communication, employee socialization, psychological climates of organizations, psychological stress in organizations, group processes and employee performance, and organizational change.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 564.

Typically Offered

Fall

PSYCH 880 - Industrial Psychology: Performance Appraisal

Credits 3

Examination of data sources, rating procedures, psychometric criteria for evaluating performance appraisal systems, and models/theories of the performance evaluation process.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 560 or equivalent.

Typically Offered

Spring

PSYCH 885 - History and Trends in Psychology

Credits 3

A review of the contributions of individuals and intellectual movements to the development of modern psychology. A survey of theoretical systems currently of influence.

Repeat for Credit

N

Requisites

Prerequisite: PSYCH 350 or equivalent.

Typically Offered

Spring

PSYCH 899 - Master's Research in Psychology

Credits 1-18

Master's Research in Psychology

Note

Consent of supervisory committee.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PSYCH 951 - Seminar in Physiological Psychology

Credits 1-3

Selected topics in physiological psychology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Other

PSYCH 952 - Seminar in Sensory Processes

Credits 1-3

Selected topics in sensory psychology.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Other

PSYCH 953 - Seminar in Personality

Credits 1-3

Intensive discussion of current problems of theoretical and empirical interest in the field of personality.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered

Other

PSYCH 954 - Seminar in Experimental Psychology

Credits 1-18

Intensive discussion of a problem of current interest based on the class's study of the pertinent original literature.

Repeat for Credit

Y

Requisites

Prerequisite: PSYCH 810 or consent of instructor.

Typically Offered

Other

PSYCH 956 - Seminar in Psychological Measurement

Credits 1-18

Intensive discussion of a problem of current interest, based on the class's study of the pertinent original literature.

Note

Consent of instructor.

Repeat for Credit

Y

Typically Offered
Other

PSYCH 957 - Seminar in Cognitive Processes

Credits 1-3

Selected topics in the study of human thinking and cognition.

Note
Consent of instructor.

Repeat for Credit
Y

Typically Offered
Other

PSYCH 958 - Seminar in Mathematical Models of Behavior

Credits 1-3

Selected topics in mathematical psychology, and applications of mathematical models to behavior.

Note
Consent of instructor.

Repeat for Credit
Y

Typically Offered
Other

PSYCH 959 - Seminar in Social Psychology

Credits 1-3

Emphasis on discussion of advanced topics of current interest in social psychology.

Note
Consent of instructor.

Repeat for Credit
Y

Typically Offered
Other

PSYCH 960 - Seminar in Industrial Psychology

Credits 3

Intensive examination of current empirical and theoretical issues in industrial and organizational psychology.

Repeat for Credit
Y

Requisites
Prerequisite: PSYCH 560 or equivalent.

Typically Offered
Fall

PSYCH 961 - Multivariate Analyses of Behavioral Data

Credits 3

Methods of working with behavioral sciences multivariate data, including screen data for compliance with assumption and addressing violations of assumptions. Coverage of common multivariate analyses used, with specific application to behavioral research content and topics.

Repeat for Credit
N

Requisites
Prerequisite: PSYCH 805 or consent of instructor.

Typically Offered
Fall

PSYCH 968 - Seminar in Professional Problems

Credits 1-3

Intensive study and discussion of current professional problems in psychology.

Note
Consent of instructor.

Repeat for Credit
Y

Typically Offered
Other

PSYCH 990 - Internship in Psychology

Credits 1-18

Internship in Psychology

Note

Consent of the supervisory committee.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PSYCH 999 - PhD Research in Psychology

Credits 1-18

PhD Research in Psychology

Note

Consent of the supervisory committee.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

RA 305 - Robotics Programming

Credits 3

Concepts and practices related to programming robotic systems emphasizing the unique input/output (I/O) and concurrency requirements of robotics. Students learn about sensors, actuators, kinematics, control systems, teleoperated operation and autonomous algorithms. Students write programs that run on a robot as well as a drive station computer with network communication to a robot.

Repeat for Credit

N

Requisites

Prerequisite: ETB 310 or CYBR 247 or CMST 302.
Corequisite: MATH 150 or MATH 151.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

RA 342 - Industrial Robotics Lab 2

Credits 1

A project-based robotics and automation laboratory course focused on industrial robots emphasizing robot operation, programming, and integration with programmable logic controllers, machine vision systems, and other automation equipment.

Repeat for Credit

N

Requisites

Prerequisite: MET 240

Typically Offered

Fall

RA 343 - Industrial Robotics Lab 3

Credits 1

A project-based robotics and automation laboratory course focused on industrial robots emphasizing robot operation, programming, and integration with programmable logic controllers, machine vision systems, and other automation equipment.

Repeat for Credit

N

Requisites

Prerequisite: MET 342

Typically Offered

Spring

RA 357 - Machine Vision

Credits 3

Introduction to practical concepts and techniques for image processing and computer vision emphasizing the fundamental algorithms applicable to robotics, automation and unmanned aerial systems. Major topics covered include: MATLAB programming, image acquisition, geometric and intensity transformations, spatial and

frequency domain filtering, image enhancement and restoration, morphological transformations, edge detection, segmentation, compression, feature extraction, and pattern recognition.

Repeat for Credit

N

Requisites

Prerequisite: ETB 310, or CMST 302, or CYBR 247.

Typically Offered

Spring

RA 444 - Integrated Robotics Studio

Credits 0-2

Students complete self-directed projects that bring together and extend applications from previous and concurrent courses toward integrated robotics solutions. Expected topics of focus draw from industrial robot programming and implementation, programmable logic control, machine vision, human-machine interfaces, other automated systems equipment, data integration, and other aspects of contemporary and emerging automation. Collaborative projects with industry partners are encouraged.

Repeat for Credit

Y

Requisites

Prerequisite: MET 240

Typically Offered

Fall or Spring

RAS 212 - Introduction to Robot Operating System (ROS)

Credits 3

A foundational understanding of the current ROS distribution and its application in robotics, preparing students for more advanced topics and practical robotics projects.

Repeat for Credit

N

Typically Offered

Fall

RAS 225 - Robot Power Systems

Credits 3

A comprehensive study of power systems for robotics, focusing on the design, implementation, and management of energy sources for mobile and stationary robots.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100

Typically Offered

Spring

RAS 260 - Path Planning and Navigation

Credits 3

Gain hands-on experience controlling robots using various sensors while exploring advanced techniques for guiding mobile robots. Develop and implement algorithms for efficient path planning and navigation in various environments including both virtual and real-world applications.

Repeat for Credit

N

Requisites

Prerequisite: RAS 212

Typically Offered

Fall

RAS 268 - Mobile Robotics Navigation Studio

Credits 1

A practical, project-based course that focuses on the development and implementation of navigation systems for mobile robots.

Repeat for Credit

N

Requisites

Prerequisite: RAS 360

Typically Offered

Spring

RAS 320 - Sensors and Perception for Robotics

Credits 3

Explore a wide range of sensors used in robotics along with the algorithms needed to interpret sensor data. Learn to select the right sensors for various applications, apply perception algorithms, and resolve sensor-related challenges.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100

Typically Offered

Fall

RAS 335 - Digital Manufacturing

Credits 3

Discover the cutting-edge world of digital manufacturing, where traditional fabrication methods merge with advanced technology to create precise and complex components. Explore the fundamentals and applications of key digital manufacturing tools.

Repeat for Credit

N

Requisites

Prerequisites: MET 117 and MET121.

Typically Offered

Fall

RAS 348 - Mobile Robotics Fabrication Studio

Credits 1

A hands-on, project-based course where students design, build, and test mobile robot systems from the ground up.

Repeat for Credit

N

Requisites

RAS 335 and ECET 340

Typically Offered

Spring

RAS 358 - Industrial Inspection Systems

Credits 2

Explore inspection systems used in industrial processes. Primary focus on vision inspection equipment including cameras, lenses, sensors, and lighting.

Repeat for Credit

N

Typically Offered

Fall

RAS 385 - Advanced Programmable Logic Controllers

Credits 3

Study of the applications of programmable logic controllers (PLCs) in industrial environments. Topics include hardware, wiring, configurations, programming, documentation, troubleshooting, and maintenance of PLC systems.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 335 or MET 230 or AIT 335.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

RAS 387 - Data Acquisition and Monitoring

Credits 2

An in-depth exploration of data acquisition systems and monitoring techniques, focusing on their application in modern engineering and robotics systems.

Repeat for Credit

N

Requisites

Prerequisite: MET 382

Typically Offered

Fall

RAS 415 - Robot Design and Kinematics**Credits 3**

Gain a broad understanding of robot systems, focusing on both physical and mathematical models. Design and analyze mobile robots, explore the dynamics of mobile platforms, and assess various mobility solutions to optimize robot designs for specific tasks.

Repeat for Credit

N

Requisites

Prerequisites: ETB 310 and MATH 220

Typically Offered

Spring

RAS 455 - Robot Embedded Systems**Credits 3**

Delve into the application of embedded systems in robotics. Develop skills in extending robot capabilities to resource-limited embedded platforms, exploring microcontroller architecture, real-time operating systems (RTOS), and embedded hardware.

Repeat for Credit

N

Requisites

Prerequisite: RAS 212 and ECET 354

Typically Offered

Fall

RAS 458 - Mobile Robotics Embedded Development Studio**Credits 1**

An advanced, hands-on course focused on the design and programming of embedded systems within mobile robot platforms.

Repeat for Credit

N

Requisites

Prerequisite: RAS 455

Typically Offered

Spring

RAS 480 - Robotics Capstone I**Credits 1**

Application of robotic principles and design methodology to solve a significant design problem in a team context. Includes determining customer requirements, exploring and choosing design alternatives, scheduling, and project management.

Repeat for Credit

N

Requisites

Senior-level standing

Typically Offered

Fall

RAS 481 - Robotics Capstone II**Credits 2**

A continuation of RAS 480 including the implementation, testing, and delivery of the proposed project.

Repeat for Credit

N

Requisites

Prerequisite: RAS 480

Typically Offered

Spring

RRES 200 - Topics in Recreation Resources**Credits 1-3**

Discussion of topics and activities of importance in recreation resources.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

RUSSN 101 - Russian I

Credits 5

Introduction to the structure of modern Russian. Emphasis on the sounds of Russian, the use of the Cyrillic alphabet, and oral drills with added practice in the language laboratory.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

RUSSN 102 - Russian II

Credits 5

Continuation of the study of Russian grammar and oral communication.

Repeat for Credit

N

Requisites

Prerequisite: RUSSN 101 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

RUSSN 250 - Russian Culture and Civilization

Credits 3

Russia's past and present in the light of principal ideologies with emphasis upon fine art, literature, music, religion,

politics, and education. Equal time will be devoted to the Tsarist and Soviet periods.

Note

Knowledge of Russian is not required.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

HIST 250

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

RUSSN 300 - Russian III

Credits 4

Completion of the study of Russian grammar. Reading of selected prose on the intermediate level.

Repeat for Credit

N

Requisites

Prerequisite: RUSSN 102 or equivalent.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

RUSSN 301 - Russian IV

Credits 3

Intensive review of Russian grammar. Exercises in reading selected modern Russian texts in the original.

Repeat for Credit

N

Requisites

Prerequisite: RUSSN 301 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

RUSSN 398 - Intermediate Studies in Russian**Credits 1-18**

Offered only to participants in study abroad programs.
Prior consultation for approval is expected.

Repeat for Credit

Y

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

**RUSSN 504 - Russian Literature in
Translation: The Nineteenth Century****Credits 3**

Survey of principal writers of Tsarist Russia with emphasis
upon Turgenev, Dostoevsky, Tolstoy, and Chekhov.

Note

Courses taught in English.

Repeat for Credit

N

Typically Offered

Other

**RUSSN 508 - Russian Literature in
Translation: The Soviet Period****Credits 3**

The development of Russian literature since the
Revolution, with emphasis upon Mayakovsky, Sholokov,
Pasternak, and Solzhenitsyn.

Note

Courses taught in English.

Repeat for Credit

N

Typically Offered

Other

RUSSN 551 - Russian V**Credits 3**

Reading of Russian short stories of the nineteenth and
twentieth centuries, including works by Pushkin,
Lermontov, Dostoevsky, and Chekhov.

Repeat for Credit

N

Typically Offered

Other

**RUSSN 553 - Russian Conversation and
Composition****Credits 3**

Discussion in Russian. Extensive practice in writing
Russian compositions.

Repeat for Credit

N

Typically Offered

Other

RUSSN 559 - Special Studies in Russian**Credits 1-18**

Special Studies in Russian

Note

Consent of department head and instructor involved.

Repeat for Credit

Y

Typically Offered

Other

SALES 300 - Fundamentals of Professional Selling

Credits 3

Focuses on interpersonal communications between buyers and sellers, both oral and written. The mechanics and intricacies of the sales process will be explored in detail. Sales skills will be further developed via sales role plays.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Social Sciences

SALES 326 - International Sales Experience

Credits 3

Embark on an immersive education abroad experience that takes learning beyond the classroom and into the heart of global communities. This course offers students the unique opportunity to explore a foreign country through academic study, cultural engagement, and hands-on experiences.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300

Typically Offered

On sufficient demand

SALES 450 - Sales Technology

Credits 3

This course reviews sales technology and examines the application of sales technologies to the sales process. Course projects will include role plays, along with the active use of technology systems. Content will include managing leads, prospects, and the sales pipeline using technology.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300, must be admitted to Professional Strategic Selling major (BPSS) or certificate (CPSS).

Typically Offered

Fall, Spring

SALES 451 - Sales Force Leadership

Credits 3

Management of the sales force in non-retail settings including coaching, supervising, providing feedback, training, and other sales management frameworks and techniques.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300, must be admitted to Professional Strategic Selling major (BPSS) or certificate (CPSS)..

Typically Offered

Fall, Spring

K-State 8

Social Sciences

SALES 452 - Customer Relationship Management

Credits 3

This course introduces students to the strategies, methodology and technology used to manage customer relationships; and support and enhance the sales and marketing functions.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

SALES 453 - Advanced Selling

Credits 3

Students apply their professional selling skills through advanced instruction and skill development. Course projects include role plays, along with real-time use of CRM systems, as part of a live sales experience. Content includes prospecting, sales pipeline management, effective sales conversations, and adaptive selling in a real-world sales context.

Repeat for Credit

N

Requisites

Prerequisite: SALES 450, must be admitted to Professional Strategic Selling major (BPSS) or certificate (CPSS)..

Typically Offered

Spring

K-State 8

Social Sciences

SALES 454 - Sales Practicum**Credits 3**

The student will work as a sales intern in a business environment as a means to gain applied sales experience. A report detailing duties performed and tasks accomplished is required at the end of the internship period, along with an evaluation by the supervisor and a self-assessment. Additionally, the student will complete required reading and assignments related to the reading.

Note

Restricted to students who have completed at least their sophomore year.

Need to have been accepted into the Certificate or Major in Professional Strategic Selling Program.

Cannot be taken concurrently with another internship class.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300, must be accepted into the Certificate or Major in Professional Strategic Selling Program, must be sophomore or higher level.

Typically Offered

Summer

SALES 455 - Sales Negotiation**Credits 3**

Students learn the fundamentals of negotiation, and how those fundamentals are used during the sales process, with the goal of improving understanding of negotiation theory and practical application. Students are expected to participate in role playing exercises.

Repeat for Credit

N

Typically Offered

Spring

SALES 456 - Key Account Management**Credits 3**

Students are introduced to the complex strategies and tactics used in identifying and managing key customer accounts, including those with large multi-national footprints.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300.

Typically Offered

Fall

SALES 457 - Cooperation Selling**Credits 3**

Students learn how to successfully synchronize their selling process with the decision maker's buying process in order to completely satisfy customers and generate more sales. Students are expected to participate in role playing exercises.

Repeat for Credit

N

Requisites

Prerequisite: SALES 300.

Typically Offered

Fall

SALES 496 - Special Topics in Sales

Credits 3

Discussion and analysis of current and emerging issues in sales, including topics related to new sales models, new technologies, and the practice of sales.

Repeat for Credit

Y

Requisites

Prerequisite: SALES 300

Typically Offered

On sufficient demand

SALES 498 - Independent Study in Sales

Credits 0-3

Independent Study in sales.

Repeat for Credit

Y

Requisites

Prerequisite: SALES 300, must be admitted to Professional Strategic Selling major (BPSS) or certificate (CPSS)..

Typically Offered

On sufficient demand

SALES 891 - Special Topics in Sales

Credits 3

Investigation and discussion of a selected topic or group of topics in sales.

Repeat for Credit

Y

Typically Offered

Fall, Spring

SENS 701 - Sensory Analysis

Credits 3

Sensory analysis of appearance, texture, aroma, flavor; physiology of sensory receptors; laboratory and consumer panels; and interpretation of data.

Note

Two hour recitation and three to six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: One course in statistics required.

Typically Offered

Fall-Odd Years

SENS 711 - Pet Food Sensory Analysis

Credits 2

Sensory analysis of food and other products for non-food animals (e.g. dogs and cats with mention of other species) with an emphasis on methods (descriptive, discrimination, consumer, sensory-related instrumental) used in the laboratory and in the field.

Note

Two hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 or STAT 702 or STAT 703 or equivalent.

Typically Offered

Spring-Odd Years

SENS 833 - Descriptive Sensory Analysis: Methods

Credits 1

Specification and application of descriptive sensory analysis methods for use in product development, research, and quality control. Practical experiences in conducting these tests.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701

Typically Offered

Spring

**SENS 834 - Descriptive Sensory Analysis:
Food and Fragrance**

Credits 1

Identification and use of descriptive sensory attributes as they relate to food and fragrance for product development, research, and quality control. Practical experiences in identifying, describing, and application of food and fragrance attributes.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 833 or co-requisite.

Typically Offered

Spring

**SENS 835 - Descriptive Sensory Analysis:
Non-Food**

Credits 1

Identification and use of descriptive sensory methods and attributes as they relate to non-food product development, research, and quality control. Practical experiences and case studies in identifying, describing, and application methods and attributes for research using products such as textiles, cosmetics, and personal goods.

Repeat for Credit

N

Requisites

Prerequisite: FNDH 833 or co-requisite.

Typically Offered

Spring

**SENS 836 - Descriptive Sensory Analysis:
Panel Training**

Credits 1

Techniques for training and evaluating sensory descriptive

panels for use in product development, research, and quality control.

Repeat for Credit

N

Requisites

Co-requisite: SENS 833.

Typically Offered

Spring

**SENS 837 - Descriptive Sensory Analysis:
Rapid Methods**

Credits 1

Use and understanding of rapid sensory techniques to descriptively evaluate products.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701 OR SENS 833

Typically Offered

Summer-Odd Years

**SENS 841 - Consumer Research -
Fundamentals**

Credits 1

Fundamentals of consumer research in terms of organizing and executing studies. Planning studies, selecting products, recruiting target consumers, and organizing study execution are included.

Repeat for Credit

N

Requisites

Prerequisite: Needs one course in Statistics

Typically Offered

Fall

SENS 843 - Consumer Research - Qualitative

Credits 1

This course provides a deep dive into qualitative research, including the design, application, execution, and reporting. This course will educate the student on the appropriate tools for qualitative data collection based on the objective, with a particular emphasis on interviews and focus groups.

Repeat for Credit

N

Requisites

Prerequisites-SENS 701 OR SENS 841

Typically Offered

Fall

**SENS 845 - Consumer Research –
Observational and Behavioral**

Credits 1

Study of observational and behavioral research methods as they are applied to consumer product research, including ethics and techniques for such research. Methods and analysis for both qualitative and quantitative methods for such data collection will be covered.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701 OR SENS 841

Typically Offered

Spring

**SENS 846 - Consumer Research –
International and Special Populations**

Credits 1

Study of consumer product research with international and special populations including children and other special populations.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701 OR SENS 841

Typically Offered

Spring

SENS 847 - Consumer Research – Attitudinal

Credits 1

Study of attitudinal research methods, including questionnaires and facial recognition, for product understanding. Techniques including emotion, mood, and psychographic research methods will be covered. Methods for consumer segmentation beyond traditional demographical segmentation will be discussed.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701 OR SENS 841

Typically Offered

Spring

**SENS 848 - Consumer Research –
Quantitative**

Credits 1

Methods and issues associated with measuring consumer responses to products including preference testing, preference ranking, acceptance testing, hedonic scales, and consumption testing.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701 or SENS 841.

Typically Offered

Fall

**SENS 851 - Sensory Analysis Applications of
Statistics**

Credits 2

Application of statistics to sensory data. Emphasis on appropriate analyses, software use, interpretation of data, and reporting.

Repeat for Credit

Y

Requisites

Prerequisite: Prerequisite: SENS 701 AND (STAT 730 or

STAT 720 or STAT 722)

Typically Offered

Fall-Even Years

SENS 852 - Practicum in Sensory Analysis

Credits 3

Application of statistics to sensory data. Emphasis on appropriate analyses, software use, interpretation of data, and reporting.

Note

Consent of School

Repeat for Credit

Y

Requisites

Prerequisite: SENS 841 or SENS 833

Typically Offered

Fall, Spring, Summer

SENS 853 - International Research Experience

Credits 2

International experience in conducting research. Development of strong collaboration and pre-planning, actual conduct, and reporting of results. International travel is required for this course. One hour of lecture per week and 1-2 week in-country practicum.

Note

Consent of School Required.

Repeat for Credit

N

Requisites

Prerequisite: SENS 701 AND (SENS 833 OR SENS 841)

Typically Offered

On sufficient demand

SENS 856 - Sensory and Instrumental Volatile Analysis and their Relationship

Credits 2

Use and relationship of methods for measuring and relating volatiles including sensory and instrumental methods such as gas chromatography mass-spectrometry (GC-MS) and gas chromatography olfactometry (GC-O).

Repeat for Credit

N

Requisites

Prerequisite: SENS 701.

Typically Offered

On sufficient demand

SENS 881 - Seminar in Sensory Analysis and Consumer Behavior

Credits 1

Student experiences for professional development including developing and delivering a presentation and navigating the workplace.

Repeat for Credit

Y

Requisites

Prerequisite: SENS 701

Typically Offered

Spring

SENS 958 - Critical Experiences in Industry Research

Credits 3-6

Practicum in professional communication in the disciplines including proposal writing, networking and collaborating with professional colleagues, and developing and/or presenting project results.

Note

Student may re-enroll to accumulate additional credit. Consent of school.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

SOCIO 211 - Introduction to Sociology

Credits 3

Development, structure, and functioning of human groups; social and cultural patterns; and the principal social processes.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

SOCIO 214 - Introduction to Sociology, Honors

Credits 4

Development, structure, and functioning of human groups; societal and cultural patterns; the nature of sociological inquiry. Lecture, discussion, and independent study.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

SOCIO 260 - Social Problems

Credits 3

Analysis of social problems such as drug use, crime, juvenile delinquency, mental illness, unemployment, and family instability.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

SOCIO 301 - Topics in Sociology

Credits 1-18

Supervised independent and/or interdisciplinary study projects.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 211 and consent of instructor.

Typically Offered

Fall, Spring

SOCIO 363 - Global Problems

Credits 3

Analysis of globalization and contemporary social problems around the world. Emphasis on non-Western, low-income countries. Examines food and hunger, global warming, debt crisis, democratization, ethnic conflict, and structures of economic and political inequality.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

SOCIO 399 - Honors Seminar in Sociology

Credits 1-3

Readings and discussion of selected topics.

Note

Open to non-majors in the honors program.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211

Typically Offered

On sufficient demand

SOCIO 423 - Methods of Social Research I**Credits 4**

Treatment of the logic and procedures involved in the formulation of a research problem and the difficulties encountered in conducting research. Examines problems of explanation and prediction, the process of inquiry, elements of the scientific method, the design of research, and analysis in the social sciences.

Note

To include 1 credit hour of lab and field research experience.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211, STAT 225.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Social Sciences

SOCIO 431 - Comparative Social Theories**Credits 3**

A systematic survey of major theoretical approaches in sociology. The works of Marx, Weber, Durkheim, and other classical theorists are examined, along with selections from major contemporary perspectives such as functionalism, symbolic interactionism, structuralism, critical theory, and feminist theory. Current debates over structure versus agency, postmodernism, and other

controversies are considered.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Social Sciences

SOCIO 435 - Sport and Contemporary Society**Credits 3**

An analysis of sport and its role in contemporary society. Course creates a greater awareness of the social significance of sport in society and fosters the capacity to use critical thinking in the analysis of significant sport issues.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring

Crosslisted

KIN 435

SOCIO 440 - Social Organization**Credits 3**

Principles and processes of the organization and structure of human societies. Examines how people create social institutions and how these organizations and structures shape human relations and experience. Analysis of capitalism and other forms of social organization.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring

SOCIO 450 - Introduction to Social Interaction

Credits 3

A survey of theories of social interaction and social psychology with special attention to research on principles of interpersonal relations in social situations, group formation, maintenance, and change.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Social Sciences

SOCIO 499 - Honors Project

Credits 3

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

SOCIO 500 - Sociological Perspectives on Contemporary Issues

Credits 1-3

Analysis of a selected topic of contemporary interest. Topics vary from semester to semester and might include: impact of public policy on rural life; white collar crime; student-athlete education; social change in the Third World.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall, Spring, Summer

SOCIO 501 - Proficiency Development

Credits 1-3

Integrative review of sociological concepts and skills under faculty supervision.

Note

For single students or groups of students. Not applicable to major field requirements. For undergraduate credit only. Consent of instructor and superior performance in relevant course.

Repeat for Credit

N

Typically Offered

On sufficient demand

SOCIO 504 - Political Sociology

Credits 3

An introduction to the principles of political sociology. Processes of political socialization, participation within and outside established organizational channels, recruitment of elites, communication and influence, power, decision making, and policy outputs. Data are presented from a cross-national perspective.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211, POLSC 110.

Typically Offered

Spring-Even Years

SOCIO 505 - South Asian Civilizations

Credits 3

Interdisciplinary survey of the development of civilizations

in India, Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, and Afghanistan, including geography, philosophy, social, economic, political institutions, and historical movements.

Repeat for Credit

N

Requisites

Prerequisite: 3 hours of social science or junior standing.

Typically Offered

Fall-Even Years

Crosslisted

GEOG 505, HIST 505, POLSC 505, ECON 505, ANTH 505

SOCIO 507 - International Development and Social Change

Credits 3

A survey of the socioeconomic and political dimensions of international development, with attention focused on developing world contexts. Special attention is given to understanding post-war development trends, including the debt crisis, globalization and neoliberalism, and movements for social change, such as the anti-globalization and the fair trade movements.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211 or consent of instructor.

Typically Offered

Other

SOCIO 510 - Social Welfare as a Social Institution

Credits 3

The development and present status of social welfare in meeting changing human needs and the requirements in other parts of our social system; the analysis of present-day philosophy and functions of social welfare.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall, Spring

SOCIO 522 - Community Engaged Research and Evaluation

Credits 3-6

Introduction to partnering with community organizations and applying observation, surveys, interviews, governmental resources, secondary data identification and analysis, and basic program and policy evaluation. Students practice notetaking, report writing, and ethical standards that protect the well-being of study participants.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 423.

Typically Offered

Fall, Spring

SOCIO 531 - Urban Sociology

Credits 3

Growth, development, and structure of the city as determined by geographical, ecological, and social factors; relation of rural and urban communities; problems of the city and various approaches to their solution.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring

SOCIO 532 - Our Communities, Our Futures

Credits 3

Combines real-world experience and sociological knowledge about community organization. Explores organizational ties, social interaction, social capital, and leadership in communities.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall, Spring

SOCIO 533 - Society, Food, and Agriculture**Credits 3**

Examines the relationships between agriculture, food, and society. Topics to be examined include the changing structure of agriculture, food system resilience, the globalization of food and agriculture, issues of distribution, access, and food security, and related social movements. Examines implications for both rural and urban societies in the US and around the world.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

SOCIO 535 - Population Dynamics**Credits 3**

World population trends and their implications for economic development, public policy, and social and cultural change. The interaction of fertility, mortality, and migration with the size, distribution, and structure of populations in nations and world regions.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring-Odd Years

SOCIO 536 - Society and Natural Resources**Credits 3**

The interrelations among human societies, social institutions, and the biophysical environment. Emphasis on the reciprocal links among technological change, economic structure, and the ecological basis of human societies.

Repeat for Credit

N

Typically Offered

Fall, Spring

SOCIO 537 - Sociology of Emotions**Credits 3**

Examines different sociological perspectives on the role of emotions in social life, from the level of self and identity, through social interaction, to the macro level of social structure, social order, and social change. Emotions as both social products, and as factors constitutive of social life.

Repeat for Credit

N

Typically Offered

Spring

SOCIO 538 - Sociology of Culture**Credits 3**

Introduction to the concept of "culture" and the role of culture and collective meaning in social life and social change. How we make sense of the world, and how this affects our responses and actions in the world. Relationship between cultural change and social change.

Repeat for Credit

N

Typically Offered

Fall

SOCIO 540 - Sexuality and Society**Credits 3**

Overview of key concepts related to sexuality studies and examination of social and cultural constructions of sexuality. Discussion of issues of power, inequalities, and

social control.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Summer

SOCIO 541 - Wealth, Power, and Privilege

Credits 3

Analysis of social inequality, particularly within the contemporary U.S. Competing explanations for unequal wealth, status, power, etc. Emphasis on explanations related to class, occupational structure, gender, and ethnicity.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring

SOCIO 544 - Social Gerontology: An Introduction to the Sociology of Aging

Credits 3

Analysis of the phenomenon of human aging in its individual, social, and cultural aspects with special attention to the problems of aging populations in Western societies.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring

SOCIO 545 - The Sociology of Women

Credits 3

Examines patterns of gender in contemporary society and corresponding experiences of women. The course emphasizes both interactional and structural approaches and provides an overview of theoretical work in the field. Particular attention is paid to how gender interacts with ethnicity, class, and sexuality.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Other

SOCIO 546 - Bureaucracy in Modern Societies

Credits 3

The nature and types of bureaucratic organizations in modern societies. Selected aspects of their internal structure, such as peer group and hierarchical relations in organizations, processes of communication, management, and impersonal mechanisms of control.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall

SOCIO 565 - Program and Policy Formulation and Analysis

Credits 3

Examination of policies and programs developed to cope with various social problems. Emphasis will be on analysis of existing programs and policies and the formulation of alternative policies. Attention will be given to policy change through legislative action.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 510.

Typically Offered

Fall, Spring

Crosslisted

SOCWK 565

SOCIO 567 - Pre-Internship Orientation**Credits 1**

This course prepares students for internship placements. Resumes are written, interview procedures discussed, agency interviews conducted, internships selected, and agency orientation completed.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 520.

Typically Offered

Fall, Spring

SOCIO 568 - Criminology and Sociology Internship**Credits 6-9**

Supervised field experience in various agencies within the criminal justice systems or other public or private organizations in areas involving applied sociological analysis or practice. Criminology majors wishing to pursue careers in the field of criminal justice are strongly encouraged to complete an internship. General sociology students may take this course under the direction of a faculty member who agrees to serve as their internship advisor. Does not fulfill sociology or criminology elective requirements.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 567.

Typically Offered

Fall, Spring, Summer

SOCIO 569 - Criminology and Sociology Professional Seminar**Credits 3**

Integrates field experience and everyday practices with relevant bodies of sociological and criminological theory and research.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 567.

Typically Offered

Fall, Spring, Summer

SOCIO 570 - Race and Ethnic Relations in the USA**Credits 3**

This survey of racial and ethnic relations focuses on discrimination and conflict now as well as on background factors of the past to enlarge understanding of dominant and minority groups.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall, Spring

SOCIO 599 - Senior Thesis in Sociology**Credits 3-6**

Independent research in sociology. Students conduct original research and produce a senior thesis in sociology.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 423; SOCIO 431, and instructor consent.

Typically Offered

Fall, Spring

SOCIO 618 - Religion in Culture

Credits 3

The nature of religion and its manifestations in different cultural systems.

Repeat for Credit

N

Requisites

Prerequisite: ANTH 200 or SOCIO 211.

Typically Offered

Spring-Odd Years

Crosslisted

ANTH 618

SOCIO 633 - Gender, Power, and Development**Credits 3**

Examination of various models of development and their impact on roles of women and men in various cultures. Emphasis upon Africa, Asia, and Latin America. Comparisons of public, service, and economic sectors, including agriculture, marketing, and industry. Examination of policy issues.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211 or ANTH 200 and 3 additional hours in sociology or cultural anthropology.

Typically Offered

On sufficient demand

Crosslisted

ANTH 633

SOCIO 635 - Sociology of Human Trafficking**Credits 3**

The course explores a range of topics related to human trafficking, anti-trafficking institutions, and legislation in the context of globalization. Analysis of contemporary forms of slavery-like practices (forced labor, child trafficking, domestic servitude, and others), with primary focus on sex trafficking of women.

Repeat for Credit

N

Typically Offered

Summer

SOCIO 640 - Sociology of the Family**Credits 3**

Origin and development of marriage customs and systems of family organization; the preparation for family life under present conditions.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall

SOCIO 643 - Sociology of Religion**Credits 3**

The role of religion as an institution in American society. An assessment of the functions of religion and an exploration of contemporary trends and movements, including information on traditional denominations and emerging sects and cults.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Fall

SOCIO 645 - Post-Communist Societies**Credits 3**

Analysis of divergent scenarios of post-communist social transformation, primarily in the countries of Eastern Europe and Eurasia. Discussion of the history of communist societies, changing social institutions, and social stratification in the post-communist contexts. Examines post-communist space and mobility, class and gender inequalities, political democratization, youth culture and

prospects, crime, global connections of the transformation, human rights and civil society, security and conflict, religion and ethnicity, and the changing family.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211.

Typically Offered

Spring

SOCIO 647 - Sociology of Work

Credits 3

Analysis of the world of work, both paid and unpaid. Examines changes that affect the organization of work and the distribution of income, and examines how change alters class, gender, and ethnic relations.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211 and junior standing.

Typically Offered

Other

SOCIO 670 - Diversity and Social Interaction in the Workplace

Credits 3

Examines changes in the world of work; examines various contexts of work, such as business, the professions, education, and home; analyzes the social organization of work, both in terms of formal arrangements, such as authority and hierarchy, and in terms of informal structure, such as gender, race, class, and other categories of social difference; provides hands-on experience in dealing with interpersonal relations, management styles, communication, diversity issues, and conflict and stress management.

Repeat for Credit

N

Requisites

Prerequisite: 6 hours of social science.

Typically Offered

Intersession

SOCIO 701 - Problems in Sociology

Credits 1-18

Problems in Sociology

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 211 and junior standing.

Typically Offered

Fall, Spring, Summer

SOCIO 738 - International Migration

Credits 3

A comprehensive examination of international migration dynamics with a focus on immigration to the U.S. Introduces current theoretical debate on migration and examines global migration trends, integration and community formation of immigrants, construction of immigration policies, and impacts on U.S. society.

Repeat for Credit

N

Typically Offered

Other

SOCIO 742 - Society and Change in South Asia

Credits 3

Examines recent studies of family and community, population, mobility, urbanization, and modernization in the India-Pakistan region, with focus on social change.

Repeat for Credit

N

Requisites

Prerequisite: SOCIO 211 or ANTH 200 and either a 500-level course in South Asian studies or one in social change and development.

Typically Offered
Spring-Even Years

SOCIO 801 - Introductory Proseminar

Credits 1

Discussions designed to introduce entering graduate students to the discipline of sociology as a profession and to the members of the sociology graduate faculty.

Note

Required during the first fall semester on campus.

Repeat for Credit
Y

Requisites

Prerequisite: Admission to the graduate program in sociology.

Typically Offered
Fall

SOCIO 802 - Teaching Proseminar

Credits 1

Designed to aid new graduate teaching assistants. Includes such topics as planning a sociology course, handling sensitive issues, leading discussions in large and small classes, use of audiovisuals, special projects, classroom deportment, designing and grading examinations.

Note

Required of first-semester GTAs.

Repeat for Credit
Y

Requisites

Prerequisite: Interest in teaching sociology and enrollment in the sociology graduate program.

Typically Offered
Fall

SOCIO 809 - Classical Social Theory

Credits 3

Intensive seminar in classical sociological theory. Examines the theoretical frameworks and methodologies of

Karl Marx, Max Weber, and Emile Durkheim, along with selections from the works of other major classical theorists. Analysis of primary texts will be emphasized.

Repeat for Credit
Y

Requisites

Prerequisite: SOCIO 511 or equivalent.

Typically Offered
Fall

SOCIO 810 - Contemporary Sociological Theory

Credits 3

Comparative analysis of contemporary schools of sociological thought showing their development, current status, and possible future trends. Emphasis on structural functionalism, Marxism and neo-Marxism, symbolic interactionism, phenomenology and ethnomethodology, and exchange theory. A working knowledge of classical sociological theory is assumed.

Repeat for Credit
Y

Requisites

Prerequisite: SOCIO 710 or equivalent.

Typically Offered
Spring

SOCIO 822 - Introduction to Methods of Social Analysis

Credits 3

Provides an introduction to the methods and techniques utilized in sociological research. Includes such topics as basic collecting and analyzing sociological data.

Repeat for Credit
Y

Requisites

Prerequisite: STAT 702 or equivalent.

Typically Offered
Fall

SOCIO 823 - Intermediate Methods of Social Research

Credits 3

Current sociological research techniques, strategies of research design, construction of research instruments, logic of sociological inquiry, conceptualization, problem formation, and preparation of research proposals.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing.

Typically Offered
Spring

SOCIO 824 - Qualitative Methodology

Credits 3

Collection, analysis, and presentation of sociological data using such methods as participant observation, ethnomethodology, community analysis, documentary research and historiography, case study, and life history. Emphasis upon formulation of problems and the execution of research.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing.

Typically Offered
On sufficient demand

SOCIO 825 - Quantitative Methods

Credits 3

Provides instruction for advanced techniques in the quantitative analysis of sociological data. Includes regression analysis and estimation of models with categorical data. A working knowledge of basic statistical concepts is assumed.

Repeat for Credit
Y

Requisites

Prerequisite: STAT 702 or equivalent.

Typically Offered
Fall

SOCIO 830 - Social Demography

Credits 3

The study of human population, including the social, economic, political, ecological, and cultural determinants and consequences of changes in fertility, mortality, and migration.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing.

Typically Offered
Fall

SOCIO 831 - Sociology of Agriculture

Credits 3

Provides a survey of the subfield of sociology of agriculture, including an examination of its roots, growth and current theoretical and substantive directions. Explores the linkages between agriculture, commodity systems, food and the environment.

Repeat for Credit
Y

Requisites
Prerequisite: Graduate standing.

Typically Offered
Spring-Odd Years

SOCIO 832 - Sociology of Community

Credits 3

A survey of theoretical perspectives and current research on the sociology of community in the U.S. and other countries. Examples of issues covered include community growth and decline, social inequality, community power and politics, social implications of community economic change, urbanization, and the global context of local change.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Spring-Odd Years

SOCIO 833 - Gender Differentiation and Inequality**Credits 3**

Offers an analysis of the social construction and reproduction of gender identities. Focuses on current feminist theory and research on the links between gender identities and gender inequality.

Repeat for Credit

Y

Typically Offered

Spring-Even Years

SOCIO 835 - Environment and Society**Credits 3**

The interrelationships among population, technology, environment, and social organization. An examination of the origins and development of human ecology in sociology, and recent attempts to redefine the area. Special emphasis on current theoretical and research efforts focusing on the history and uses of ecological ideas.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Spring-Even Years

SOCIO 838 - Sociology of Culture**Credits 3**

Intensive reading and discussion of classical and contemporary works relating to the study of culture, all those things that render the world around us comprehensible, communicable, and meaningful. The

Focus on collective meaning, the process through which meaning is generated, and the roles collective meanings play in social life.

Repeat for Credit

N

Typically Offered

Fall

SOCIO 840 - Comparative Social Systems**Credits 3**

Compares social systems in different regions of the world. Examines models of comparative and historical sociology. Provides students with a background for conducting and evaluating comparative research. Treats such issues as socioeconomic development, group relations, and age and sex roles from a cross-cultural perspective.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall-Even Years

SOCIO 841 - Social Stratification**Credits 3**

Survey of major sociological theories and research on inequality in modern societies. Examines the distribution of wealth, status, political power, and other valued resources; the effects of class, race, gender, and other modes of social differentiation; social mobility and the reproduction of inequality.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Fall

SOCIO 842 - Technology and Society

Credits 3

Technology has contributed to significant changes in our social, cultural, and economic landscape. Provides a survey of theoretical perspectives and current research on the role of technology in society.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Spring-Even Years

SOCIO 850 - Criminal Justice in Context**Credits 3**

Examines various institutions of contemporary criminal justice operations, focusing primarily on the "three C's"-cops, courts, and corrections-and adjacent subjects such as law. Emphasis will be given to foundational works that emphasize history, theory, policy, and empirical research.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Other

SOCIO 851 - Sociology of Development**Credits 3**

Introduction to the sociology of development. Focus is comparative-historical, involving theoretical and empirical analysis of development dynamics over time and across places, both within the U.S. and abroad. Significant attention to the interdisciplinary aspects of the sociology of development, including economic, geographic-spatial, and political analyses.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing.

Typically Offered

Spring-Odd Years

SOCIO 853 - International Development**Credits 3**

Comparative analysis of competing theories and experiences of development in post-WWII Asian, African, and Latin American societies. Topics include how core theories of development have changed over time and how well they explain related and changing patterns of finance and production, class struggle, state society-relations, labor rights, gender relations, and migration.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 809.

Typically Offered

Fall

SOCIO 861 - Sociology of Deviance**Credits 1**

A critical examination of the nature, types, and societal reactions to deviant behavior. Special emphasis will be given to the process of stigmatization, the social construction of deviance as a social problem, and the effect of inequalities such as race, gender, class, and sexuality on the process of creating and applying deviant labels to individuals and groups.

Repeat for Credit

Y

Requisites

Prerequisite: 9 hours social science credit.

Typically Offered

Fall-Odd Years

SOCIO 862 - Criminological Theory**Credits 3**

Focuses on traditional and contemporary criminological theories with secondary emphasis on presentation of empirical studies employing the theories under study. Theoretical integration will be stressed.

Repeat for Credit

Y

Requisites

Prerequisite: Twelve hours of social science.

Typically Offered

Spring-Odd Years

SOCIO 863 - Sociology of Victimology**Credits 3**

Focuses on the unique area of Victimology. Examines recent scholarship, methodological issues, and theoretical perspectives. Requires research paper and peer criticism.

Repeat for Credit

N

Typically Offered

Fall, Spring

SOCIO 880 - Social Movements**Credits 3**

Examines sociological theories about social movements and their organizational structures and strategies, with an analysis of historical and contemporary nationalist, socialist, labor, womens, civil rights, and environmental movements in the United States and around the world.

Repeat for Credit

N

Typically Offered

Fall-Odd Years

SOCIO 897 - Practicum in Social Analysis**Credits 3-6**

Provides professional field experience for students enrolled in the Master's in Social Analysis program in an approved public agency, organization, or private firm, under direction of a faculty member. Requires participation in a quarterly seminar.

Repeat for Credit

Y

Requisites

Prerequisite: One semester in the MSA program and SOCIO 822.

Typically Offered

Spring

SOCIO 898 - Master's Report Research**Credits 1-18**

Master's Report Research

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

SOCIO 899 - Master's Thesis Research**Credits 1-18**

Master's Thesis Research

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

SOCIO 901 - Research Problems in Sociology**Credits 1-18**

Individual study and research for students admitted to doctoral standing in the Graduate School.

Repeat for Credit

Y

Requisites

Prerequisite: M.A., consent of instructor.

Typically Offered

Fall, Spring, Summer

SOCIO 911 - Seminar in Sociological Theory**Credits 3**

Selected topics in sociological theory. May be repeated with consent of supervisory committee.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 710 and SOCIO 810.

Typically Offered
Spring

SOCIO 923 - Methods of Social Policy Research

Credits 3

Examination of principles, techniques, and design of retrospective and prospective social policy research.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 823 or equivalent.

Typically Offered
Fall-Even Years

SOCIO 925 - Specialized Approaches to Sociological Research

Credits 3

Intensive examination of methodological approaches developed for analysis of sociological problems. The approaches to be examined will depend on faculty and student interests. Likely foci include estimation procedures for structural equation models, advanced techniques for quantitative analysis of categorical data, techniques for social network analysis and methods for comparative and historical analysis.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 823 and instructor's permission.

Typically Offered
Spring-Odd Years

SOCIO 931 - Seminar in Demographic Methods

Credits 3

Demographic processes such as fertility, mortality, and migration, with emphasis on measurements, methods, and analytical techniques. Includes the construction of life tables and population estimates and projections.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 823 and SOCIO 830.

Typically Offered
Spring-Even Years

SOCIO 932 - Seminar in Comparative Community Organization

Credits 3

Recent developments in theory and research on processes affecting community organization. Topics will vary. Possible emphases include world urbanization, community linkages to regional and global systems, technology and local economic development, rural community development, and community-based collective action.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 832 or SOCIO 834 or equivalent.

Typically Offered
Fall-Odd Years

SOCIO 933 - Gender and Society

Credits 3

Exploration of feminist theorizing of gender relations in constructing and maintaining social institutions. Objective is to acquaint students with the strengths and weaknesses of current theories of gender, and to analyze social structures as both constituting and constitutive of gender relations at the macro/meso level of society.

Repeat for Credit
Y

Requisites

Prerequisite: SOCIO 841.

Typically Offered

Spring-Odd Years

SOCIO 934 - Sociology of Rural Development**Credits 3**

Consideration of selected topics and issues in the social organization of rural areas, both international and in the U.S.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 851 or consent of instructor.

Typically Offered

Fall-Odd Years

SOCIO 935 - Seminar in Demography**Credits 3**

Consideration of selected topical areas in demography such as fertility and family planning, migration, population and development, and regional demography.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 830 or equivalent.

Typically Offered

On sufficient demand

SOCIO 940 - Seminar in Work and Organizations**Credits 3**

Topics and issues in the social structure of industries, firms, and labor processes.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 841.

Typically Offered

Fall-Odd Years

SOCIO 944 - Seminar in the Sociology of Aging**Credits 3**

Consideration of selected topics and issues in the sociology of aging such as retirement and institutional change, societal reactions to aging, population structure and socioeconomic consequences of aging populations, the social organization of leisure, the impact on social organization of services for older people, the structural and organizational consequences of widowhood, age-grading and stratification in aging populations, analysis of the impact on community structure, and organization of special institutions for older people.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 744.

Typically Offered

Other

SOCIO 950 - Seminar in Social Interaction**Credits 3**

Examination of current theoretical, methodological, and research issues and topics.

Repeat for Credit

Y

Requisites

Prerequisite: SOCIO 852, or equivalent.

Typically Offered

Spring-Even Years

SOCIO 951 - Political Sociology**Credits 3**

A survey of core readings in the subfield of political sociology. Covers classical sociological

and political theory followed by current debates and research agendas, including world systems theory, post-colonial theory, neo-marxism, resource mobilization theory, game theory, and cultural theories of political action.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 809

Typically Offered
Spring-Even Years

SOCIO 953 - States and Civil Society

Credits 3

Examines the relationship between the modern nation-state and powerful non-state institutions and social forces. Introduces prominent theories on the rise of the nation-state and its global transmission as the dominant form of governance. Addresses the role of social capital, social movements, NGOs, religious organizations, and educational institutions in upholding or challenging nation-state legitimacy.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 809; SOCIO 851.

Typically Offered
Spring-Even Years

SOCIO 961 - Methods Seminar in Criminology/Deviance

Credits 3

Examination of principles, techniques, and design of research in criminology, deviance, and corrections.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 824 or SOCIO 825.

Typically Offered
Fall-Even Years

SOCIO 962 - Topics Seminar in Criminology/Deviance

Credits 3

Selected topical areas in criminology/deviance such as gender, race and/or class and crime; social control; domestic violence; lethal violence; victimology; issues in corrections; and issues in law.

Repeat for Credit
Y

Requisites
Prerequisite: SOCIO 850 or consent of instructor.

Typically Offered
Spring-Odd Years

SOCIO 999 - PhD Dissertation Research

Credits 1-18

PhD Dissertation Research

Repeat for Credit
Y

Typically Offered
Other

SOCWK 100 - Social Work: The Helping Profession

Credits 3

An introduction to the profession of social work and the various fields of social service by observing, experiencing, and analyzing social work and its place in society. An opportunity for the student to test social work as a possible career choice.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8

Historical Perspectives
K-State 8 Tag 2
Social Sciences

SOCWK 141 - First Year Orientation

Credits 1

Orients first year students to the social work major and on-campus resources that will enable them to be successful. Engages students in discussion groups and community engagement activities to meet social work faculty members and students within the major. Develops student relationships and practices that allow them to effectively utilize college resources and become members of a community of learners.

Repeat for Credit
N

Typically Offered
Fall or Spring

SOCWK 151 - Social Work Career Development

Credits 1

Develops career goals of social work majors. Exposes students to the breadth of career options in social work. Connects students with practicing social workers and faculty members.

Repeat for Credit
N

Typically Offered
Fall or Spring

SOCWK 200 - Basic Skills for Working with People

Credits 3

Course develops basic skill components for the helping professions. Students learn fundamentals of interpersonal communication.

Repeat for Credit
N

Typically Offered

Fall, Spring

K-State 8
Ethical Reasoning and Responsibility

SOCWK 240 - Self-care for the Helping Professional

Credits 1

Explores personal health and self-care of the helping professional. Discusses importance of self-care and best practices for maintaining personal and professional well-being across the physical, mental, social, and spiritual self.

Repeat for Credit
N

Typically Offered
Spring

SOCWK 261 - Client Perspectives in Social Work

Credits 1

Develops student critical thinking skills and understanding of client experiences through memoirs and first-person accounts of living within different at-risk populations. Explores client experiences and needed policies to address social problems.

Repeat for Credit
Y

Typically Offered
Fall or Spring

SOCWK 300 - Diversity, Equity, Inclusion, and Belonging in Social Work Practice

Credits 3

Provides foundational knowledge of diversity, equity, inclusion, and belonging within social work practice in the United States. Examines theoretical, conceptual, and policy-based knowledge of systems of oppression, and the ways in which power and privilege are manifested within them.

Repeat for Credit
N

Typically Offered
Fall or Spring

K-State 8
Social Sciences
K-State 8 Tag 2
Human Diversity within the U.S.

SOCWK 310 - Topics in Social Work

Credits 1-3

Supervised independent study projects.

Note
Consent of the instructor.

Repeat for Credit
Y

Typically Offered
Fall, Spring

SOCWK 312 - Fundamentals of Communication for the Agriculture and Food Science Community

Credits 3

This course develops communication skills among the scientific community to improve discourse with lay persons. Fundamentals of active listening as well as techniques to diffuse tense situations are addressed.

Repeat for Credit
N

Typically Offered
Fall, Spring

SOCWK 315 - Human Behavior in the Social Environment I

Credits 3

An introduction to the relationship among biological, social, psychological, and cultural systems as they affect or are affected by human behavior as it relates to social world models of practice. Emphasis on social systems understanding of human development.

Repeat for Credit
N

Requisites
Prerequisite: Two courses in the social sciences and sophomore standing.

Typically Offered
Fall, Spring

K-State 8
Human Diversity within the U.S.
K-State 8 Tag 2
Social Sciences

SOCWK 320 - Dynamics of Working with Older Adults

Credits 3

Provide students in all fields a unique foundation upon which successful interaction with older adults is built. Specific communication techniques will be taught along with the knowledge, skills and values necessary to understand working with, or on the behalf of, older consumers, clients, patients and family members.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Human Diversity within the U.S.
K-State 8 Tag 2
Social Sciences

SOCWK 340 - Global Social Work

Credits 3

Explores the underlying theories, concepts, and practice skills related to international social work.

Repeat for Credit
N

Typically Offered
Fall-Odd Years

K-State 8
Global Issues and Perspectives

SOCWK 350 - Social Work with Criminal Offenders and Victims

Credits 3

This course offers an overview of social work practice and professional helping skills in the criminal justice and legal systems.

Repeat for Credit

N

Requisites

Prerequisites: SOCWK 100 or SOCIO 211 and SOCIO 361.

Typically Offered

Fall-Even Years

K-State 8

Social Sciences

K-State 8 Tag 2

Human Diversity within the U.S.

SOCWK 360 - Substance Abuse Case Management and Holistic Recovery

Credits 3

Introduction to the concept of case management and the role case managers play in helping persons with substance use disorders obtain and maintain recovery.

Repeat for Credit

N

Typically Offered

Spring, Summer

SOCWK 370 - Child Welfare

Credits 3

Provides students with an understanding of the dynamics of child maltreatment and the role of the child welfare system in responding to maltreatment. Explores maltreatment across generations, the role of societal norms in perpetuating maltreatment, and culturally competent services for ending the intergenerational cycle of abuse. Examines government policies over time to promote child welfare and the effect of these policies on child safety, permanency, and family reunification.

Repeat for Credit

Y

Requisites

Recommended Prerequisite or Corequisite: SOCWK 100

Typically Offered

Fall, Spring

K-State 8

Social Sciences

SOCWK 380 - Social Work and Intimate Partner Violence

Credits 3

This course will provide students an understanding of the knowledge and skills necessary to respond to intimate partner violence in an ethical, victim-centered and trauma informed manner.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 100 or SOCIO 211.

Typically Offered

Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

SOCWK 468 - Community Activism and Social Change

Credits 3

Examines how social workers and citizens, individually and collectively, can achieve social progress through nonviolent social change.

Repeat for Credit

Y

Requisites

Prerequisite: SOCWK 100 or SOCIO 211.

Typically Offered

Spring-Even Years

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Historical Perspectives

SOCWK 499 - Honors Project**Credits 3**

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

SOCWK 501 - Proficiency Development**Credits 1-3**

Integrative review of social work concepts and skills under faculty supervision. For single students or groups of students.

Note

For single students or groups of students. Not applicable to major field requirements. Consent of instructor and superior performance in relevant course.

Repeat for Credit

Y

Typically Offered

Other

SOCWK 510 - Social Welfare as a Social Institution**Credits 3**

Examines policies and programs to address social problems and their impact on individuals. Explores values and beliefs underlying social welfare policy and history of social welfare policy in the United States. Identifies strengths and weaknesses of current government interventions, with special emphasis on policies to promote social and economic justice in the United States and abroad. Reviews ways to conduct effective social welfare policy analysis and interventions.

Repeat for Credit

N

Requisites

Prerequisite: One course in each of the following areas: sociology, economics, and political science.

Typically Offered

Fall, Spring

Crosslisted

SOCIO 510

SOCWK 530 - Social Work Research and Evaluation Methods**Credits 3**

Focuses on applying research skills to engage in the evidence-based practice (EBP) process, a core component of generalist practice. Students will prepare a program evaluation proposal, including formulating a problem statement, EBP development, designing an evaluation plan, and selecting appropriate outcome measures.

Note

Social work and addiction counseling majors only.

Repeat for Credit

Y

Requisites

Prerequisite: MATH 100 OR STAT 225

Social Work and Addiction Counseling majors only

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

SOCWK 550 - Field Practicum Preparation**Credits 1-3**

Social work majors take this course in the semester before enrollment in SOCWK 562 Field Experience, in preparation for the field practice experience. Students explore various fields of practice and social work settings and work with the instructor to plan their practicum for the following semester.

Note

Social work majors only.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor permission.

Typically Offered

Fall, Spring

SOCWK 560 - Social Work Practice I

Credits 3

Continued development of social work practice skills. The social systems perspective is used to guide the development of a problem-solving methodology with attention to information gathering, assessment, and problem identification. Values clarification and self awareness are emphasized and the skills needed for intervention, termination, and evaluation are introduced.

Note

Social Work majors only.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 100, SOCWK 200, SOCWK 315, and SOCWK 510; junior standing; and permission of the instructor.

Social Work majors only.

Typically Offered

Fall, Spring

SOCWK 561 - Social Work Practice II

Credits 3

Continuation of SOCWK 560 with emphasis on skill development in intervention techniques, and practice evaluation from a social systems perspective. A variety of intervention strategies and techniques is presented with emphasis on the development of a social work frame of reference.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 560 and senior standing and permission of the instructor.

Must be taken concurrently with SOCWK 571 or by instructor permission.

Typically Offered

Fall, Spring

SOCWK 562 - Field Experience

Credits 1-10

Supervised field experience in community agencies and programs as a practical application of social work knowledge and skills gained from major course work. Emphasis on direct work with clients, whether individuals, groups, or communities. Seminars make use of student's experiences to analyze social work theory and practice.

Note

Social work majors only.

Repeat for Credit

Y

Requisites

Prerequisite: SOCWK 550 and SOCWK 561; senior standing; permission of the instructor.

Social work majors only

Typically Offered

Fall, Spring, Summer

SOCWK 563 - The Practice of Social Work in Rural Areas

Credits 3

A review of characteristics and social problems of rural areas. The development of practice competency in social work roles and skills necessary for rural practice.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 560.

Typically Offered

On sufficient demand

SOCWK 564 - Social Work Professional Seminar

Credits 1-2

A review of various theories in the behavioral sciences which influence the practice of social work. Primary focus of the course is on the use of these theories in implementing change in various client systems.

Repeat for Credit

Y

Requisites

Prerequisite: To be taken concurrent with SOCWK 562.

Typically Offered

Spring, Summer

SOCWK 565 - Social Policy**Credits 3**

Examination of policies and programs developed to cope with various social problems. Emphasis will be placed on analysis of existing programs and policies and the formulation of alternative policies. Attention will be given to policy change through organizational and legislative actions.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 510; one course in each of the following areas: sociology, economics, and political science; and one course in social science research methods.

Typically Offered

Fall, Spring

Crosslisted

SOCIO 565

SOCWK 568 - Macro Practice and Theory**Credits 3**

Continuation of social work practice sequence with focus on skills development for macro-level social work practice and an understanding of macro-systems using the ecological perspective as a framework. Community and organization intervention strategies with emphasis on the development of a social work frame of reference. Focus on institutional racism, institutional discrimination, and the importance of recognizing these functions within society.

Note

Social work majors only.

Repeat for Credit

N

Requisites

Co-requisite: SOCWK 560 or instructor permission.

Social work majors only

Typically Offered

Fall, Spring

SOCWK 570 - Social Work with Groups**Credits 3**

Theoretical framework for effective generalist social work practice with groups, facilitates the development of group leaders who possess an understanding of group dynamics and effective leadership skills through group discussion, experiential exercises and leadership experiences. To be taken concurrently with SOCWK 561.

Note

Social work majors only.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 560 or instructor permission.

Co-requisite: SOCWK 561.

Social work majors only.

Typically Offered

Fall, Spring

SOCWK 610 - Topics in Social Work**Credits 1-3**

Supervised independent study projects.

Repeat for Credit

Y

Requisites

Prerequisite: SOCWK 100 plus 6 hours of behavioral science foundation courses and consent of instructor.

Typically Offered

Other

SOCWK 611 - Social Welfare as a Social Institution**Credits 3**

Examines policies and programs to address social problems and their impact on individuals. Explores values and beliefs underlying social welfare policy and history of social welfare policy in the United States. Identifies strengths and weaknesses of current government interventions, with special emphasis on policies to promote social and economic justice in the United States and abroad. Reviews ways to conduct effective social welfare policy analysis and interventions.

Repeat for Credit

N

Typically Offered

Spring

SOCWK 612 - Fundamentals of Communication for the Agriculture and Food Science Community**Credits 3**

This course develops communication skills among the scientific community to improve discourse with lay persons. Fundamentals of active listening as well as techniques to diffuse tense situations are addressed. Students will apply the skills learned to their career field through a final research project.

Repeat for Credit

N

Typically Offered

Fall, Spring

SOCWK 630 - Social Work Research and Evaluation Methods**Credits 3**

This course focuses on applying research skills to engage in the evidence-based practice (EBP) process, a core component of generalist practice. Students will prepare a program evaluation proposal, including formulating a

problem statement, EBP development, designing an evaluation plan, and selecting appropriate outcome measures.

Repeat for Credit

Y

Typically Offered

Fall

SOCWK 650 - Assessment and Treatment of Substance Use Disorders**Credits 3**

Comprehensive examination of substance use treatment and rehabilitation includes a thorough examination of the treatment models of addiction, recovery, and relapse.

Repeat for Credit

N

Typically Offered

Fall, Summer

SOCWK 660 - Social Work Practice I**Credits 3**

Development of social work practice skills. The social systems perspective is used to guide the development of a problem-solving methodology with attention to information gathering, assessment, and problem identification. Values clarification and self-awareness are emphasized and the skills needed for intervention, termination and evaluation are introduced.

Repeat for Credit

N

Typically Offered

Fall

SOCWK 661 - Social Work Practice II**Credits 3**

Advanced development of social work practice skills with emphasis on skill development in intervention techniques, and practice evaluation from a social systems perspective. A variety of intervention strategies and techniques is presented with emphasis on the development of a social work frame of reference.

Repeat for Credit

N

Requisites

Prerequisite: SOCWK 660.

Typically Offered

Spring

SOCWK 662 - Field Experience**Credits 1-10**

Supervised field experience in community agencies and programs as a practical application of social work knowledge and skills gained from social work course work. Emphasis on direct work with clients, whether individuals, groups, or communities. Assignments make use of student's experiences to analyze social work theory and practice.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

SOCWK 668 - Macro Practice and Theory**Credits 3**

Social work practice with focus on skills development for macro-level social work skills and an understanding of macro-systems using the ecological perspective as a framework. Community and organization intervention strategies with emphasis on the development of a social work frame of reference. Focus on institutional racism, institutional discrimination, and the importance of recognizing these functions within society.

Repeat for Credit

N

Typically Offered

Fall

SOCWK 670 - Social Work with Groups**Credits 3**

Provides the theoretical framework for effective generalist social work practice with groups, facilitates the development of group leaders who possess an understanding of group dynamics and effective leadership skills through group discussion, experiential exercises and leadership experiences.

Repeat for Credit

N

Typically Offered

Spring

SPAN 003 - Orientation for Summer School Abroad Program in Zacatecas/Cuernavaca, Mexico**Credits 0**

Orientation for Summer School Abroad Program in Zacatecas/Cuernavaca, Mexico

Repeat for Credit

Y

Typically Offered

On sufficient demand

SPAN 101 - Spanish I**Credits 4**

Designed for students with no prior Spanish experience. Develops basic language skills and cultural awareness to function in everyday situations in Spanish-speaking communities. Conducted in Spanish with practice in speaking, listening, reading, and writing.

Note

Heritage speakers of Spanish see SPAN 302 or 411 and/or contact spanishcoordination@ksu.edu for placement.

Repeat for Credit

N

Requisites

Recommended Prerequisite: Less than 1-year previous Spanish study, and/or contact spanishcoordination@ksu.edu for placement.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 102 - Spanish II

Credits 4

Continuation of Spanish 1. Develops basic language skills and cultural awareness to function in everyday situations in Spanish-speaking communities. Conducted in Spanish with practice in speaking, listening, reading, and writing.

Note

Heritage speakers of Spanish see SPAN 302 or 411 and/or contact spanishcoordination@ksu.edu for placement.

Repeat for Credit

N

Requisites

Recommended Prerequisite: SPAN 101, 1-2 years high school, and/or contact spanishcoordination@ksu.edu for placement.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 110 - Conversational Spanish for the Workplace

Credits 3

Introduction to the basic Spanish conversational skills focusing on everyday language used in the workplace with an emphasis on technical terms and concepts, supplemented with grammar and writing.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Human Diversity within the U.S.

SPAN 201 - Spanish III

Credits 3

Enhances skills in reading and analysis to develop intermediate proficiency in Spanish. Grammatical structures presented in context through literary and informational texts, media, to promote cultural awareness. Conducted in Spanish.

Note

This course applies toward major or minor requirements. Heritage speakers of Spanish see SPAN 302 or SPAN 411, and/or contact spanishcoordination@ksu.edu for placement

Repeat for Credit

N

Requisites

Recommended Prerequisite: SPAN 102, 3-4 years high school, and/or contact spanishcoordination@ksu.edu for placement.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 301 - Spanish IV

Credits 3

Bridges to more advanced language, culture, and literature courses. Grammatical structures studied in context through literary and informational materials. Conducted in Spanish. Practice in researching and presenting the history and cultures of Spanish-speaking countries.

Note

This course applies toward major or minor requirements. Heritage speakers of Spanish see SPAN 302 or SPAN 411, and/or contact spanishcoordination@ksu.edu for placement

Repeat for Credit

N

Requisites

Recommended Prerequisite: SPAN 201, 4-5 years high school or equivalent.

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 302 - Spanish IV for Heritage Speakers**Credits 3**

Designed for individuals who have been exposed to Spanish from an early age at home. Promotes awareness of linguistic variation in Spanish; exposes students to an academic register; develops basic literary skills, such as spelling and lexicon, so that learners can effectively engage in scholarly contexts and endeavors.

Note

This course is equivalent to SPAN 301, and applies toward major or minor requirements.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Global Issues and Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

SPAN 398 - Intermediate Studies in Spanish**Credits 1-18**

Offered only to participants in study abroad programs. Prior consultation for approval is expected.

Repeat for Credit

Y

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 410 - Spanish Communication through Pop Culture**Credits 3**

Improve spontaneous conversation in Spanish through impromptu discussions, word games, partner conversations and more. Improve our writing skills through creative writing prompts, peer-review and writing workshops. Activate language absorption through authentic input by listening to music, watching documentaries, tv shows and films, and reading short stories and graphic novels in Spanish.

Repeat for Credit

N

Requisites

Recommended: SPAN 301 or SPAN 302 or equivalent.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 411 - Spanish for heritage speakers: Composition and grammar**Credits 3**

Course for heritage speakers of Spanish to improve reading and writing skills, including grammar, and develop a professional and academic knowledge of the language.

Repeat for Credit

N

Requisites

Prerequisite: Recommended SPAN 302.

Typically Offered

Fall, Spring

K-State 8

Global Issues and Perspectives

SPAN 420 - Spanish Conversation

Credits 3

Intensive practice in conversation to develop listening and speaking skills, expand vocabulary, and review grammatical structures.

Note

May be taken with SPAN 410. Course designed for students whose primary language is not Spanish or whose competence has been demonstrated in the language at this level.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 301 or equivalent.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SPAN 421 - Listening Skills**Credits 3**

Develops aural comprehension skills for communicative situations with focus on Spanish phonetics and interpretation of oral texts within the corresponding cultural context.

Note

Not open to native speakers of Spanish.

Repeat for Credit

N

Requisites

Prerequisites: SPAN 410 or equivalent.

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

SPAN 530 - Professional Spanish: Business**Credits 3**

Develops culturally relevant communication skills in business and professional contexts. Specialized content and vocabulary including professional writing, such as employment materials.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 410 or SPAN 411.

Typically Offered

Fall, Spring

SPAN 531 - Professional Spanish: Health and Human Services**Credits 3**

Develops culturally relevant communication skills in health and human services contexts (including social work, kinesiology, dietetics, education). Specialized content and vocabulary, community-based learning, and experience in professional writing.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 410 or SPAN 411.

Typically Offered

Fall

SPAN 550 - Introduction to Hispanic Readings and Media**Credits 3**

Communication, critical thinking, and analytical skills applied to Spanish-language literary texts, film, and art. Skill development through conversation, presentations, papers, and creative projects.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 410 or SPAN 411.

Typically Offered
Fall, Spring, Summer

SPAN 551 - Hispanic Readings and Media for Heritage Language Learners

Credits 3

Spanish literary introductory course for students who have acquired Spanish at home at an early age. A wide variety of literary productions and modalities are explored (e.g., songs, poems, fiction, and films). Special emphasis is placed on 1) identity-related discussions and 2) the sharing of cultural experiences to facilitate the co—construction of knowledge and the creation of a community.

Repeat for Credit
N

Requisites
Recommended Prerequisite: SPAN 411

Typically Offered
Fall or Spring

SPAN 560 - Cultures of the Spanish-speaking World: U.S. Latinx

Credits 3

Explores the development of literature and other media representing Latinx experiences in the United States since the Mexican-American War.

Note
Taught in Spanish, may include some texts in English.
SPAN 550 strongly recommended.

Repeat for Credit
N

Requisites
Prerequisite: SPAN 410 or SPAN 411.

Typically Offered
Fall, Spring, Summer

SPAN 565 - Cultures of the Spanish-speaking World: Spain

Credits 3

Develops a critical understanding of the historical, political, and forces that have shaped Spanish literature and culture through an interdisciplinary focus on a topic, (e.g. cities, music, sport).

Repeat for Credit
N

Requisites
Prerequisite: SPAN 550.

Typically Offered
Fall, Spring, Summer

SPAN 566 - Cultures of the Spanish-speaking World: Spanish America

Credits 3

Develops critical understanding of the historical, political and social forces that have shaped Spanish America through interdisciplinary focus on a region or topic (e. g. food and identity, journeys, revolutions).

Repeat for Credit
N

Requisites
Prerequisite: SPAN 550.

Typically Offered
Spring

SPAN 567 - Cultures of the Spanish-speaking World: Transatlantic

Credits 3

Develops critical understanding of the historical, political, social forces that have connected Spanish and Spanish American literatures and cultures over time through interdisciplinary focus on a topic (e.g., conflict, exploration, social class).

Repeat for Credit
N

Requisites
Prerequisite: SPAN 550 and SPAN 565.

Typically Offered
Fall, Spring, Summer

SPAN 568 - Literature of Spanish America

Credits 3

Analysis of representative works of Spanish American literature from the pre-Columbian period to the present. Develops an understanding of historical and cultural context within the framework of Spanish American literary criticism.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and SPAN 566.

Typically Offered

Fall, Spring, Summer

SPAN 569 - Special Studies in Spanish

Credits 1-18

Special Studies in Spanish

Note

Consent of department head and instructor involved.

Repeat for Credit

Y

Typically Offered

Other

SPAN 575 - Introduction to Spanish Translation

Credits 3

Introduction to concepts of translation, including aspects of history, theory, and professional ethics. Practice in bi-directional translation [Spanish-English-Spanish] of a variety of texts in different genres including literature.

Repeat for Credit

N

Requisites

Prerequisite: Minimum of 3 credit hours at the 500 level or instructor permission.

Typically Offered

On sufficient demand

SPAN 580 - Introduction to Spanish Linguistics

Credits 3

Introduction to the fundamentals of linguistic analysis, including the sound system, word and sentence formation, and semantic and pragmatic meaning. Formal and usage-based perspectives. Application of linguistics to language acquisition theory and to pedagogy.

Note

Taught in Spanish.

Repeat for Credit

N

Requisites

Prerequisite: Minimum of 3 hours at the 500 level or instructor permission.

Typically Offered

fall, Spring

SPAN 670 - Advanced Spanish Grammar

Credits 3

Intensive study of the structures of the Spanish language for communicative and pedagogical purposes. Comparison/contrast to English structures.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 410 or equivalent.

Typically Offered

Fall, Spring, Summer

SPAN 730 - Medieval Spanish Literature

Credits 3

Texts and contexts in Medieval Spain, from jarchas to La Celestina. Focus on the roles of ideologies, schools and genres. Incorporates manuscripts and oral traditions. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 567 or SPAN 568. SPAN 565 recommended.

Typically Offered

Fall, Spring

SPAN 731 - Early Modern Literature of Spain**Credits 3**

Contextualized discussion and analysis of literature and cultural life in 15th-17th-century Spain. Course may be focused on a theme, genre, or writer (such as Miguel de Cervantes).

Note

Note: Develops ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 732 - Cervantes**Credits 3**

Reading and discussion of the works of Cervantes and of his literary and cultural background. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 567 or SPAN 568. SPAN 565 recommended.

Typically Offered

Fall, Spring

SPAN 734 - 18th- and 19th- Century Spain**Credits 3**

Contextualized discussion and analysis of literature and

cultural life in 18th-19th-century Spain. Course may be focused on a theme, genre, or movement (Enlightenment, Romanticism, Realism, Naturalism). Topics may include anticlericalism and Catholicism; revolution and empire; scientific reasoning.

Note

Develops ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 735 - 20th- and 21st-Century Spain**Credits 3**

Contextualized discussion and analysis of contemporary Spanish literature and cultural life. Course may be focused on a theme or genre (e.g., the Generation of '27, the Spanish Civil War, the Franco dictatorship and transition to democracy, feminism, or immigration).

Note

Develops the ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 736 - Spanish Poetry**Credits 3**

Texts and contexts of poetry in Spain from the jarchas of the early Middle Ages through the 21st Century. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 567 or SPAN 568. SPAN 565 recommended.

Typically Offered

Other

SPAN 750 - Spanish American Narrative**Credits 3**

Contextualized discussion and analysis of literary and cultural narratives over time, focused on a theme or region. Topics may include cultural encounters, illness, and disability, ecology, modernity.

Note

Develops ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 751 - Spanish-American Narrative: Early Twentieth Century**Credits 3**

Contextualized discussion and analysis of early twentieth-century narrative literature. Includes modernismo, the Avant-Garde, and criollismo/la novela de la tierra. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 567 or SPAN 568. SPAN 565 recommended.

Typically Offered

Fall, Spring

SPAN 752 - Spanish-American Topics**Credits 3**

Interdisciplinary exploration of a Spanish American political, social, or cultural issue over time. Examples: memory and testimonio, utopia and dystopia, gender and sexuality. Includes literary readings and media.

Repeat for Credit

Y

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 755 - Spanish American Performance Studies**Credits 3**

A contextualized interdisciplinary approach to performance studies in Spanish America. Discussion and analysis of plays and other performative events (political protests, rituals, installations). May focus on a time period, region, or theme.

Note

Develops the ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 757 - Spanish-American Poetry**Credits 3**

Contextualized discussion of Spanish American poetry over time, focused on a theme or region. Examples: musicality and song lyrics, places and journeys, voice and identity, innovation.

Note

Develops the ability to interpret and craft complex, abstract

language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and additional 6 hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 760 - U.S. Latinx Literature and Culture in Spanish

Credits 3

Examines the border as a metaphorical concept in Latinx literature and culture. Analysis of literary texts and media that explore intersecting identities, languages, and counter-traditions that shape the Latinx cultural legacy in the U.S.

Note

Develops the ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 550 and 6 additional hours at the 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 768 - Hispanic Cinema

Credits 3

Critical analysis of films representing a selected region, period, or theme, within their theoretical, cultural, socio-political and historical contexts.

Note

Develops the ability to interpret and craft complex, abstract language. Reading- and writing-intensive class. May be repeated with a different topic.

Repeat for Credit

Y

Requisites

Prerequisite: SPAN 550 and 6 additional hours at 500-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 771 - Advanced Spanish Translation

Credits 3

Analysis and practice in bi-directional translation [Spanish-English-Spanish] of a variety of texts from a number of genres, including literary texts. Discussion of professional opportunities for translators and interpreters. Development of personal portfolio.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 575 or senior level.

Typically Offered

Spring, Summer

SPAN 772 - Spain Today

Credits 3

Explores key issues of contemporary Spain including the legacy of the Spanish Civil War. Interdisciplinary focus on a topic, such as regional tensions, economics, politics. Representative literary texts and media serve as a basis for developing a critical view of the region.

Note

Develops the ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: Minimum of 3 hours at the 700-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 773 - Spanish America Today

Credits 3

Focus on the most significant cultural, social, political, ecological and economic issues affecting Spanish America in recent years. Representative literary texts and media serve as a basis for developing a critical view of the region. Reading- and writing-intensive class.

Note

Develops the ability to interpret and craft complex, abstract language. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: Minimum of 3 hours at the 700-level or instructor permission.

Typically Offered

On sufficient demand

SPAN 774 - Topics in Spanish Translation/Interpreting

Credits 3

Theory, strategies, terminology, and practice in a designated field between Spanish and English translation and /or interpreting (fields: healthcare, literary translation, legal, technical and scientific, community interpreting).

Repeat for Credit

Y

Requisites

Prerequisite: SPAN 575 or SPAN 771.

Typically Offered

Other

SPAN 776 - History of the Spanish Language

Credits 3

The development of Spanish from Latin to its present-day variation in the Spanish-speaking world. Influence of and interaction with world cultures and languages across time. Reading- and writing-intensive class.

Repeat for Credit

N

Requisites

Prerequisite: SPAN 565 or SPAN 566 or SPAN 567 or

SPAN 568.

Typically Offered

Spring

SPAN 777 - Hispanic Cultures and Literatures: Teaching Strategies

Credits 3

An integrated teaching program that develops linguistic, cultural and literary skills through the analysis and interpretation of texts from Spain and Spanish-America. Emphasis on student-centered cooperative and collaborative learning. Reading- and writing-intensive class.

Repeat for Credit

Y

Requisites

Prerequisite: SPAN 565 or SPAN 566 or SPAN 567 or SPAN 568.

Typically Offered

Fall, Spring

SPAN 779 - Selected Topics in Spanish

Credits 3

In depth exploration of a special cultural, linguistic and/or literary subject. Reading- and writing- intensive class.

Repeat for Credit

Y

Requisites

Prerequisite: SPAN 565 or SPAN 566 or SPAN 567 or SPAN 568.

Typically Offered

Fall, Spring, Summer

SPAN 780 - Spanish in the US

Credits 3

Surveys sociolinguistic features, socio-historical events, and matters pertaining to identity as key elements that shape a growingly popular linguistic variety despite its continuous stigmatization: Spanish in the US.

Repeat for Credit

N

Requisites

Prerequisites: Two 500-level SPAN courses (SPAN 580 preferred), instructor permission or Modern Language graduate student status.

Typically Offered

Fall or Spring

SPAN 799 - Research Topics in Spanish

Credits 1-18

A seminar with variable topics.

Repeat for Credit

Y

Typically Offered

Other

SPAN 898 - Master's Report

Credits 1-2

A written report of either research or problem work on a topic in the major field.

Note

Consult of major professor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

SPAN 899 - Research in Modern Languages

Credits 1-18

Research in Modern Languages

Repeat for Credit

Y

Typically Offered

Other

SSO 735 - Electron Microscopy of Aerospace Materials

Credits 3

This course introduces students to the theory, fundamental operating principles, specimen preparation techniques, and chemical analysis utilizing scanning electron microscopy (SEM). Additionally, this course will emphasize these principles and techniques for characterizing the structure of aerospace materials at different length scales.

Repeat for Credit

N

Typically Offered

Fall, Spring

SSO 736 - Aerospace Metallurgy and Ceramics

Credits 3

The science of metallurgy and ceramics and their manufacture will be the basis of this course and is aimed at providing the necessary fundamentals for understanding aerospace materials.

Repeat for Credit

N

Typically Offered

Fall, Spring

SSO 738 - Advanced Composite Materials

Credits 3

The fundamentals of polymer-, metal-, and ceramic-matrix composites will be taught in this course and will be applied to solving a variety of aerospace problems.

Repeat for Credit

N

Typically Offered

Fall, Spring

SSO 739 - Space Systems Design and Dynamics

Credits 3

This course focuses on introducing students to the analysis, architecture, and design of spacecraft including the analysis of orbit and attitude control, navigation systems, physical structures, propulsion systems, communication systems, thermal and electrical power systems. Similarities between spacecraft will be covered in detail and systems aspects of mission profiles will be discussed and analyzed.

Repeat for Credit

N

Typically Offered

Fall

SSO 740 - Space Systems Modeling, Simulation, and Control**Credits 3**

The course will introduce students to space mission modeling, simulation and control with an emphasis on space missions supporting civil and commercial operations. Topics include orbital mechanics, communications, space environment, spacecraft technology, civil/commercial space systems, model-based systems engineering concepts applied to physical systems, agent-based modeling and discrete event simulation of space systems. Systems dynamics modeling will be applied to physical space systems operating in various microgravity environments.

Repeat for Credit

N

Typically Offered

Fall

SSO 742 - Manufacturing and Materials in Space and on Earth**Credits 3**

The course will introduce the student to the world of manufacturing on Earth and in space. The course content includes the history of manufacturing in space, manufacturing spacecraft on Earth (spacecraft, telescopes, satellites, rovers, etc.), manufacturing standards, additive manufacturing, manufacturing construction in space, materials science aboard the International Space Station, challenges of manufacturing in space, circular economics and sustainability and planetary mining, materials and manufacturing.

Repeat for Credit

N

Typically Offered

Spring

SSO 801 - Space Operations and Environment**Credits 3**

Concentrates on the commercial and military use of space operations. Space operations have two goals: exploration and commercialization of space to benefit humanity as well as space warfare and conflict to defend earth resources and space resources.

Repeat for Credit

N

Typically Offered

Spring

STAT 100 - Statistical Literacy in the Age of Information**Credits 3**

Focus will be on the development of an awareness of statistics at the conceptual and interpretative level, in the context of everyday life. Data awareness and quality, sampling, scientific investigation, decision making, and the study of relationships are included. Emphasis will be on the development of critical thinking through in-class experiments and activities, discussions, analysis of real data sets, written reports, and collaborative learning. Computing activities will be included where appropriate; no previous computing experience required.

Intended for majors in non-quantitative fields.

Note

Cannot be taken for credit if credit has been received for any other statistics course.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

**STAT 150 - Statistics and Data Science:
Introductory Seminar for Majors****Credits 1**

An introduction to the field of statistics and data science. Topics of special interest to undergraduates majoring in statistics and data sciences, including cultural and professional aspects of the field and exploration of careers available to those trained in statistics and data science.

Repeat for Credit

N

Typically Offered

Fall, Spring

STAT 225 - Introduction to Statistics**Credits 3**

A first course in probability and statistics; random sampling; graphical and numeric summaries of qualitative and quantitative data; correlation and least squares regression; probability and random variables; the normal distribution, sampling distributions and the Central Limit Theorem; confidence intervals for one mean and one proportion; sample size estimation; hypothesis tests for one parameter, power and type I and II errors; statistical inference for the difference of two means based on independent samples and matched pairs designs; statistical inference for the difference of two population proportions.

Note

Cannot be taken for credit if credit has been received for STAT 240 or 250.

Repeat for Credit

N

Requisites

Students not meeting at least one of the KBOR placement measures below are required to also take STAT 226, which is a 2-credit corequisite support class.

Placement measures: A test score equal to or greater than, Math ACT 19 OR Math SAT 510 OR ALEKS PPL 30 OR Accuplacer QAS 255; OR (unweighted HS GPA 3.00 AND grade of C- or better in Algebra 2 or Integrated Math 3); OR MATH 100.

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

STAT 226 - Introduction to Statistics Support**Credits 2**

Note: Introduction to Statistics Support credits cannot count towards the 120 required credits of a degree program. Students who do not meet any of the KBOR multiple placement measures for elementary statistics must also enroll in STAT 226 as the corequisite course to STAT 225.

Introduction to Statistics Support is the corequisite course for STAT 225 -Introduction to Statistics. STAT 226 aims to fill in gaps in students' background knowledge to promote success in STAT 225. The content of STAT 226 is directly aligned with the course objectives and content of STAT 225 but allows for flexibility to fit individual student needs. Topics vary based on student needs but can include simplifying and manipulating numerical and algebraic expressions; and reviewing functions, plots, graphs of functions, exponents, logarithms, and set theory. Students must enroll concurrently in STAT 225 and STAT 226.

This course was designed through a Kansas Board of Regents Math Pathways initiative. STAT 226 is the KBOR math pathways corequisite course for the Introduction to Statistics course.

Repeat for Credit

N

Requisites

Corequisite: STAT 225

Typically Offered

Fall, Spring

STAT 240 - Biometrics I**Credits 3**

A basic first course in probability and statistics with textbook, examples, and problems aimed toward the biological sciences. Frequency distributions, averages, measures of variation, probability, confidence intervals; tests of significance appropriate to binomial, multinomial, Poisson, and normal sampling; simple regression and

correlation.

Note

Cannot be taken for credit if credit has been received for STAT 225 or 250.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

STAT 250 - Business and Economic Statistics I

Credits 3

A basic first course in probability and statistics with textbook, examples, and problems pointed toward business administration and economics. Frequency distributions, averages, index numbers, time series, measures of variation, probability, confidence intervals, tests of significance appropriate to binomial, multinomial, Poisson, and normal sampling; simple regression and correlation.

Note

Cannot be taken for credit if credit has been received for STAT 225 or 240.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

STAT 341 - Biometrics II

Credits 3

Analysis and interpretation of biological data using analysis of variance, analysis of covariance, and multiple regression. Negative binomial distribution and its applications.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225 or STAT 240 or STAT 250.

Typically Offered

Spring

STAT 351 - Business and Economic Statistics II

Credits 3

Continuation of STAT 250 including study of index numbers, time series, business cycles, seasonal variation, multiple regression and correlation, forecasting; some nonparametric methods applicable in business and economic studies.

Repeat for Credit

N

Requisites

Prerequisite: STAT 225, STAT 240 or STAT 250.

Typically Offered

Fall, Spring, Summer

STAT 410 - Probabilistic Systems Modeling

Credits 3

Descriptive statistics and graphical methods; basic probability; probability distributions; several random variable; Poisson processes; computer simulation of random phenomena; confidence interval estimation; hypothesis testing.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221 and CIS 300.

Typically Offered

Spring

STAT 450 - Special Topics for Undergraduates in Statistics and Data Science

Credits 1-3

Study of special topics in statistics and data science methods for undergraduates.

Note

Instructor consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

STAT 490 - Statistics for Engineers**Credits 1**

First course in statistics with examples and problems toward engineering. Distributions, means, measures of variation, confidence intervals, graphical display of data, simple regression and correlation, philosophy of experimentation.

Note

Must be taken concurrent with a laboratory course in engineering which uses statistics.

Repeat for Credit

N

Typically Offered

Fall, Spring

STAT 491 - Statistics for Engineers II**Credits 1**

A continuation of STAT 490. Offered second half of the semester following STAT 490. Statistical tests, multiple regression, model fitting, simple comparative and factorial experiments. Emphasis on computer analysis of data.

Repeat for Credit

N

Requisites

Prerequisite: STAT 490.

Typically Offered

Fall, Spring

STAT 499 - Honors Project**Credits 3**

Open only to Arts and Science students who are active

members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

STAT 510 - Introductory Probability and Statistics I**Credits 3**

Descriptive statistics, probability concepts and laws, sample spaces; random variables; binomial, uniform, normal, and Poisson; two-dimensional variates; expected values; confidence intervals; binomial parameter, median, mean, and variance; testing simple hypotheses using CIs and χ^2 ; goodness of fit. Numerous applications.

Repeat for Credit

N

Requisites

Prerequisite: MATH 221.

Typically Offered

Fall, Spring

STAT 511 - Introductory Probability and Statistics II**Credits 3**

Law of Large Numbers, Chebycheff's Inequality; continuation of study of continuous variates; uniform, exponential, gamma, and beta distribution; Central Limit Theorem; distributions from normal sampling; introduction to statistical inference.

Repeat for Credit

N

Requisites

Prerequisite: STAT 510.

Typically Offered

Spring

STAT 610 - Introduction to Mathematical Statistics I

Credits 3

Development of axiomatic probability; univariate and multivariate random variables and their probability distribution functions; conditional distributions and independent random variables; methods of transformation for distributions of functions of random variables; convergence in distribution and probability.

Repeat for Credit

N

Requisites

Prerequisite: MATH 222.

Typically Offered

Fall

STAT 611 - Introduction to Mathematical Statistics II**Credits 3**

Estimation of probability distribution parameters by maximum likelihood, Bayesian and bootstrap methods; minimum variance unbiased estimation based on sufficient statistics; mean squared error and consistency of estimators; confidence interval estimation; statistical tests of hypotheses by likelihood ratios; most powerful tests; distribution-free inference; applications to regression models and categorical data.

Repeat for Credit

N

Requisites

Prerequisite: STAT 610.

Typically Offered

Spring

STAT 701 - Fundamental Methods of Biostatistics**Credits 3**

A course emphasizing concepts and practice of statistical data analysis for the health sciences. Basic techniques of descriptive and inferential statistical methods applied to health related surveys and designed experiments. Populations and samples, parameters and statistics; sampling distributions for hypothesis testing and confidence intervals for means and proportions involving

one sample, paired samples and multiple independent samples; odds ratios, risk ratios, simple linear regression. Use of statistical software to facilitate the collection, manipulation, analysis and interpretation of health related data.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

Crosslisted

MPH 701

STAT 703 - Introduction to Statistical Methods for the Sciences**Credits 3**

Statistical concepts and methods applied to experimental and survey research in the sciences; tests of hypotheses, parametric and rank tests; point estimation and confidence intervals; linear regression; correlation; one-way analysis of variance; contingency tables, chi-square tests.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing and equivalent of college algebra.

Typically Offered

Fall, Spring, Summer

STAT 705 - Regression and Analysis of Variance**Credits 3**

Simple and multiple linear regression, analysis of covariance, correlation analysis, one-, two- and three-way analysis of variance; multiple comparisons; applications including use of computers; blocking and random effects.

Repeat for Credit

N

Requisites

Prerequisite: One previous statistics course.

Typically Offered
Fall, Spring, Summer

STAT 706 - Basic Elements of Statistical Theory

Credits 3

The mathematical representation of frequency distributions, their properties, and the theory of estimation and hypothesis testing. Elementary mathematical functions are used to illustrate theory.

Repeat for Credit
N

Requisites
Prerequisite: MATH 205, MATH 210 or MATH 220 and STAT 225 or equivalent.

Typically Offered
Fall

STAT 710 - Sample Survey Methods

Credits 3

Design, conduct, and interpretation of sample surveys.

Repeat for Credit
N

Requisites
Prerequisite: STAT 510 or STAT 770.

Typically Offered
Fall-Even Years

STAT 713 - Applied Linear Statistical Models

Credits 3

Matrix-based, applied linear regression procedures at a mathematical level appropriate for a first-year graduate statistics major. Topics include basic methodological development for simple and multiple linear regression, model building and diagnostics, analysis of variance/covariance and multiple comparison methods. Other topics from ANOVA modeling may also be covered if time permits.

Note
A student may not receive graduate credit for both STAT

705 and STAT 713.

Repeat for Credit
N

Requisites
Prerequisite: MATH 515/551 or an equivalent course and one prior course in statistics.

Typically Offered
Fall

STAT 716 - Nonparametric Statistics

Credits 3

Hypothesis testing when form of population sampled is unknown: rank, sign, chi-square, and slippage tests; Kolmogorov and Smirnov type tests; confidence intervals and bands.

Repeat for Credit
N

Requisites
Prerequisite: STAT 705 or STAT 713.

Typically Offered
Fall-Odd Years

STAT 717 - Categorical Data Analysis

Credits 3

Analysis of categorical count and proportion data. Topics include tests of association in two-way tables; measures of association; Cochran-Mantel-Haenzel tests for 3-way tables; generalized linear models; logistic regression; loglinear models.

Repeat for Credit
N

Requisites
Prerequisite: STAT 705 or STAT 713.

Typically Offered
Spring

STAT 720 - Design of Experiments

Credits 3

Planning experiments so as to minimize error variance and avoid bias; Latin squares; split-plot designs; switch-back or reversal designs; incomplete block designs; efficiency.

Repeat for Credit

N

Requisites

Prerequisite: STAT 705 or STAT 713.

Typically Offered

Spring, Summer

STAT 722 - Experimental Design for Product Development and Quality Improvement

Credits 3

A study of statistically designed experiments which have proven to be useful in product development and quality improvement. Topics include randomization, blocking, factorial treatment structures, fractional factorial designs, screening designs, and response surface methods.

Repeat for Credit

N

Requisites

Prerequisite: STAT 705 or STAT 511 or STAT 713.

Typically Offered

Fall

STAT 725 - Introduction to the SAS Computing

Credits 1

Topics may include basic environment and syntax, reading and importing data from files, writing and exporting data to files, data manipulation, basic graphics, and built-in and user-defined functions.

Repeat for Credit

N

Requisites

Prerequisite: One prior course in Statistics.

Typically Offered

Fall

STAT 726 - Introduction to R Computing

Credits 1

Topics may include basic environment and syntax, reading and importing data from files, data manipulation, basic graphics, and built-in and user-defined functions.

Repeat for Credit

N

Requisites

Prerequisite: One prior level course in Statistics.

Typically Offered

Fall

STAT 727 - Statistical Computing/Numerical Methods of Statistics

Credits 3

Topics may include efficient programming techniques, generating data from non-standard distributions, designing simulation studies, resampling methods, creating and using functions and subroutines, parallel computing in statistics, interfacing lower-level languages (e.g., C, C++, Fortran) with data analysis software (e.g., SAS, R), computational complexity, convergence analysis of algorithms.

Repeat for Credit

N

Requisites

Prerequisite: STAT 726 and STAT 771 or STAT 511.

Typically Offered

Spring

STAT 730 - Multivariate Statistical Methods

Credits 3

Multivariate analysis of variance and covariance; classification and discrimination; principal components and introductory factor analysis; canonical correlation; digital computing procedures applied to data from natural and social sciences.

Repeat for Credit

N

Requisites

Prerequisite: STAT 705 or STAT 713.

Typically Offered

Spring

STAT 736 - Bioassay**Credits 2**

Direct assays; quantitative dose-response models; parallel line assays; slope ratio assays; experimental designs for bioassay; covariance adjustment; weighted estimates; assays based on quantal responses.

Note

Meets four times a week during second half of semester.

Repeat for Credit

N

Requisites

Prerequisite: STAT 705 or STAT 713.

Typically Offered

Spring-Odd Years

STAT 745 - Statistical Graphics**Credits 3**

Visual display of quantitative information. Statistical graphics topics to include visual perception, basic graphics construction, quantitative univariate to multivariate statistical graphics, trellis displays, introduction to smoothing and graphics, introduction to density estimation and graphics, and categorical graphics. Modern graphics software will be used.

Repeat for Credit

N

Requisites

Prerequisite: STAT 705 or equivalent.

Typically Offered

Spring-Even Years

STAT 750 - Studies in Probability and Statistics**Credits 1-4**

Studies of topics in probability, statistics, experimental design, stochastic processes, or other topics.

Note

Instructor consent

Repeat for Credit

Y

Typically Offered

On sufficient demand

STAT 760 - Optimization for Data Science**Credits 3**

The class presents the theory and algorithms for linear and nonlinear optimization problems with continuous variables. Topics covered include convex analysis, first- and second-order optimality methods, duality, KKT conditions, algorithms for unconstrained optimization, linearly and nonlinearly constrained problems, and convergence rates of algorithms. The theory and algorithms are applied to data science problems arising in machine learning, statistics, and related fields (e.g., maximizing likelihood and penalized likelihood functions, MM algorithms, EM algorithms, model selection, Sparse PCA). Students are expected to be comfortable with rigorous mathematical arguments.

Repeat for Credit

N

Requisites

Prerequisite: STAT 511 or STAT 771, and prior knowledge of linear algebra and matrix theory e.g., MATH 551, and some programming knowledge e.g., STAT 726.

Typically Offered

Spring-Even Years

STAT 761 - Discrete Optimization and Scalability for Data Science**Credits 3**

Topics covered include computational complexity, NP-hardness, data as networks, graph theoretic algorithms, exact, approximation, heuristic and online algorithms, and connections between convex and non-convex optimization problems. The theory and algorithms are applied to data science problems arising in statistical machine learning, statistical clustering, design of experiments, observational studies, sampling, and variable selection. Applications may be motivated using data from social networks, search engines, the stock market and

elections.

Repeat for Credit

N

Requisites

Prerequisites: STAT 705 or STAT 713 and STAT 720 and programming knowledge e.g. STAT 726.

Typically Offered

Spring-Odd Years

STAT 764 - Applied Spatio-Temporal Statistics

Credits 3

Construction and analysis of spatial, time-series, and spatio-temporal data sets. Topics include data generation using geographic information systems, exploratory data analysis and visualization, and descriptive and dynamic spatio-temporal statistical models. For context, a focus will be on biological or ecological data.

Repeat for Credit

N

Requisites

Prerequisites: STAT 510 or STAT 770, and STAT 705, or STAT 713, and STAT 726 or equivalent.

Typically Offered

Spring-Even Years

STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics

Credits 3

Addresses the complete process of building analytical tools suitable for learning from data, including automatic online data collection, feature extraction, supervised and unsupervised statistical machine learning methods, evaluation, and report writing. Automatic retrieval of various format online data, including JSON, REST, and Streaming API, http(s), html, xml, and databases. Statistical text processing/mining, state of the art supervised and unsupervised data mining methods, case studies and applications to business, government, social and news media data. Methods include regularized linear and logistic regression, classification trees, nearest neighbor methods, support vector machines, naive Bayes, random forests, boosting/bagging/AdaBoost, clustering, latent

Dirichlet allocation, network analysis, and topic modeling models.

Repeat for Credit

N

Requisites

Prerequisites: STAT 705 or STAT 713 or STAT 717, and prior computer programming proficiency on C, C++, Fortran, R, or Python e.g., CIS 209, STAT 726.

Typically Offered

Fall

STAT 768 - Applied Bayesian Modeling and Prediction

Credits 3

Bayes rule, principles of Bayesian inference, Bayesian perspective on statistical models, posterior distribution computations using simulations, Markov Chain Monte Carlo (MCMC) (including Gibbs sampling, Metropolis-Hastings algorithm, slice sampler, hybrid forms and alternative algorithms), convergence monitoring and diagnosis, hierarchical models, model checking and model selection, and applications in the sciences using computer software such as R and WinBUGS.

Repeat for Credit

N

Requisites

Prerequisites: STAT 705 or STAT 713, and STAT 510 or STAT 770.

Typically Offered

Spring-Odd Years

STAT 770 - Theory of Statistics I

Credits 3

Introduction to probability theory, random variables, transformations of random variables, expectations, discrete and continuous distributions, moment generating functions, families of distributions, multivariate random variables, joint and marginal distributions, conditional distributions and independence, sampling distributions of normal populations, order statistics, convergence of random variables, and the central limit theorem.

Repeat for Credit

N

Requisites

Prerequisite: MATH 222.

Typically Offered

Fall

STAT 771 - Theory of Statistics II**Credits 3**

Introduction to the sufficiency principle, the likelihood principle, point estimation, uniformly minimum-variance unbiased estimators, hypothesis testing, uniformly most powerful tests, interval estimation, and asymptotic evaluations of estimators and tests.

Repeat for Credit

N

Requisites

Prerequisite: STAT 770.

Typically Offered

Spring

STAT 799 - Topics in Statistics**Credits 0-3**

Topics in Statistics

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

STAT 810 - Seminar in Probability and Statistics**Credits 1**

Discussion and lectures on topics in probability and statistics; one seminar talk by each student registered for credit.

Repeat for Credit

Y

Requisites

Prerequisite: Graduate standing and at least two graduate courses in statistics.

Typically Offered

Fall, Spring

STAT 818 - Theory of Life-Data Analysis**Credits 3**

A study of models and inferential procedures important to life-data analysis. Comparison of estimators (MLE, BLUE, etc.). Pivotal quantities. Design and regression models for non-normal distributions. Analysis of censored data.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 771 and STAT 705 or STAT 713.

Typically Offered

Fall-Even Years

STAT 842 - Probability for Statistical Inference**Credits 3**

Probability spaces and random elements, distributions, generating and characteristic functions, conditional expectation, convergence modes and stochastic orders, continuous mapping theorems, central limit theory and accuracy, laws of large numbers, asymptotic expansions for approximating functions of random variables and distributions.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 770 and STAT 771, or equivalent; MATH 633 or equivalent, or concurrent enrollment in MATH 633.

Typically Offered

Fall

STAT 843 - Statistical Inference

Credits 3

Distributions (commonly used univariate and multivariate distributions, including exponential families of distributions and properties), order statistics and distributional properties, (asymptotic) unbiased estimation and the information inequality, likelihood inference for parametric statistical models (including the multi-parameter case, regular and non-regular cases), confidence sets, functional parameters and statistical functional, density estimation and nonparametric function estimation, permutation methods.

Repeat for Credit

N

Requisites

Prerequisite: STAT 842; MATH 634 or equivalent, or concurrent enrollment in MATH 634.

Typically Offered

Spring

STAT 850 - Stochastic Processes**Credits 3**

Normal processes and covariance stationary processes; Poisson processes; renewal counting processes; Markov chains; Brownian motion; applications to science and engineering.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 770.

Typically Offered

Spring-Even Years

STAT 860 - Linear Models I**Credits 3**

Subspaces, projections, and generalized inverses; multivariate normal distribution, distribution of quadratic forms; optimal estimation and hypothesis testing procedures for the general linear model; application to regression models, correlation model.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 713, STAT 771.

Typically Offered

Fall

STAT 861 - Linear Models II**Credits 3**

Continued application of optimal inference procedures for the general linear model to multifactor analysis of variance, experimental design models, analysis of covariance, split-plot models, repeated measures models, mixed models, and variance component models; multiple comparison procedures.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 860.

Typically Offered

Spring

STAT 870 - Analysis of Messy Data**Credits 3**

Design structures; treatment structures; equal and unequal variances; multiple comparisons; unequal subclass numbers; missing cells; interpretation of interaction; variance components; mixed models; split-plot and repeated measures; analysis of covariance; cross-over designs.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 720.

Typically Offered

Fall

STAT 880 - Time Series Analysis**Credits 3**

Autocorrelation function; spectral density; autoregressive integrated moving average processes; seasonal time series; transfer function model; intervention analysis; regression

model with time series error.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 713 and STAT 771.

Typically Offered

Fall-Odd Years

STAT 898 - Master's Report

Credits 2

Master's Report

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

STAT 899 - Master's Thesis Research

Credits 1-18

Master's Thesis Research

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

STAT 903 - Statistical Methods for Spatial Data

Credits 3

Theoretical development of modeling and inference techniques for spatially and/or temporally referenced data, including geostatistical data, lattice data and spatial point patterns; methodology for autocorrelation estimation and prediction; nonstationary spatial processes; asymptotics and computational methods for large spatial datasets; computer-aided applications.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 771, plus one introductory course in statistical computing (e.g. STAT 726 or equivalent background).

Typically Offered

Spring-Odd Years

STAT 904 - Resampling Methods

Credits 3

Theoretical development of resampling procedures, including parametric and nonparametric bootstrap, jackknife, randomization and permutation methods; expansion theory for bootstrap inference; implementation of resampling procedures via statistical computational tools.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 713, STAT 771.

Typically Offered

Spring-Even Years

STAT 905 - High-Dimensional Data and Statistical Learning

Credits 3

Theoretical framework of statistical methods for the analysis of large-scale data with the aim of understanding data mining, supervised and unsupervised statistical learning techniques from a statistical decision theoretic framework. Methods for model selection, dimensionality reduction, multiple testing control, and estimation in high-dimension data. Emphasis on the conceptual underpinning of different tools for analysis of large-scale data and how they relate to each other. Applications in various fields, including the sciences and engineering, using computer software.

Repeat for Credit

N

Requisites

Prerequisite: (STAT 713 and STAT 771), or (STAT 727 and STAT 760).

Typically Offered
Fall-Even Years

STAT 907 - Bayesian Statistical Inference

Credits 3

Principles of Bayesian estimation, testing and prediction; Bayes factors and posterior probabilities of hypotheses; hierarchical modeling; Bayesian model selection and assessment; Bayesian computation and asymptotics; nonparametric Bayesian models.

Repeat for Credit
N

Requisites
Prerequisite: STAT 713 and STAT 771, plus one introductory course in statistical computing (e.g. STAT 725 or STAT 726 or equivalent background).

Typically Offered
Fall-Odd Years

STAT 920 - Experimental Design Theory

Credits 3

Incomplete block designs; theory of the construction and analysis of experimental designs.

Repeat for Credit
Y

Requisites
Prerequisite: STAT 720 and STAT 861.

Typically Offered
Spring-Odd Years

STAT 930 - Theory of Multivariate Analysis

Credits 3

The multivariate normal distribution, the Wishart distribution, Jacobians of vector and matrix transformations, Hotelling's T^2 statistic, the union-intersection principle, tests on mean vectors and covariance matrices, Box's approximations to critical points, the multivariate general linear model, discriminant analysis,

and principal component analysis.

Repeat for Credit
Y

Requisites
Prerequisite: STAT 730 and STAT 861.

Typically Offered
Spring-Even Years

STAT 940 - Advanced Statistical Methods

Credits 3

Generalized linear models and generalized mixed models. Statistical models based on the exponential family of distributions. Applications to non-normal and discrete data, including binary, Poisson and gamma regression, and log-linear models. Topics include likelihood-based estimation and testing, model-fitting, residual analyses, over-dispersed models, quasi-likelihood, large sample properties, and the use of computer packages. Also, methods for longitudinal repeated measures data that will include inference for continuous and discrete data. Inferential objectives include prediction of response and estimation of correlation/covariance structures. Nonparametric and semiparametric methods covered as time permits.

Repeat for Credit
Y

Requisites
Prerequisite: STAT 861, plus one introductory course in statistical computing (e.g. STAT 725 or STAT 726 or equivalent background).

Typically Offered
Fall-Even Years

STAT 941 - Advanced Statistical Inference

Credits 3

Foundations and methods of modern statistical inference including asymptotic theory in parametric models (including local asymptotic normality and contiguity), efficiency of estimators and tests, Bayes procedures, rank, sign and permutation statistics, U-, M-, L-, R-estimates, chi-square tests, empirical processes and the functional delta method, quantiles and order statistics, inference for nonparametric and semi-parametric models.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 843.

Typically Offered

Spring-Even Years

STAT 945 - Problems in Statistical Consulting**Credits 1-3**

Principles and practices of statistical consulting. Supervised experience in consultation and consequent research concerning applied statistics and probability associated with on-campus investigations.

Repeat for Credit

Y

Requisites

Prerequisite: STAT 720 and instructor consent

Typically Offered

On sufficient demand

STAT 950 - Advanced Studies in Probability and Statistics**Credits 1-3**

Theoretical studies of advanced topics in probability, decision theory, Markov processes, experimental design, stochastic processes, or advanced topics.

Note

Instructor consent

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

STAT 999 - Research in Statistics**Credits 1-18**

Research in Statistics

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

STRAN 400 - Transforming Society**Credits 3**

Examines a range of social concepts such as race, ethnicity, indigeneity, gender, sex, sexuality, class, disability, citizenship, nation, coloniality, and global location from the perspective of Social Transformation Studies.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Human Diversity within the U.S.

K-State 8 Tag 2

Ethical Reasoning and Responsibility

STRAN 550 - Practicing Social Justice**Credits 3**

Students apply their classroom learning by engaging in a community-based social justice project. Students will work with an organization, program, or creative movement that engages and supports underrepresented and/or historically marginalized communities.

Repeat for Credit

N

Requisites

Prerequisite: AMETH 160 OR GWSS 105.

Typically Offered

Fall, Spring, Summer

STRAN 600 - Pathways to Social Change**Credits 3**

An advanced seminar in which students design and launch

a research-based social transformation project on a topic and in a form of their choosing.

Repeat for Credit

N

Requisites

Prerequisite: junior or senior standing.

Typically Offered

Spring

SWAH 101 - Swahili I

Credits 4

Introduction to Swahili. A foundation in listening, speaking, writing, and reading the basic grammatical structures and vocabulary of Swahili. Aspects of Swahili/African culture will be introduced and highlighted as essential components toward achieving communicative competence.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SWAH 102 - Swahili II

Credits 4

A continuation of Swahili 101. A foundation in listening, speaking, writing, and reading the basic grammatical structures and vocabulary of Swahili. Aspects of Swahili/African culture will be introduced and highlighted as essential components toward achieving communicative competence.

Repeat for Credit

N

Requisites

Prerequisite: SWAH 101 or equivalent.

Typically Offered

Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SWAH 201 - Swahili III

Credits 4

Continuation of Swahili II. Further development of functional skills. Intensive practice of spoken and written Swahili.

Repeat for Credit

N

Requisites

Prerequisite: SWAH 102.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

SWAH 202 - Swahili IV

Credits 4

Continuation of Swahili III. Further development of functional skills. Intensive practice of spoken and written Swahili.

Repeat for Credit

N

Requisites

Prerequisite: SWAH 201.

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Global Issues and Perspectives

THTRE 111 - Production Participation

Credits 1

Provide students with practical experience when working on a theatre production. Students must choose and complete one production assignment to earn 1 credit hour. This course is available for both Theatre majors and non-majors.

Repeat for Credit

Y

Typically Offered

Fall, Spring

THTRE 171 - Fundamentals of Acting**Credits 3**

Theory and practice of fundamental skills and techniques of acting. Major emphasis is on freeing and training the individual's imagination, intellect, body, and voice through designed exercise and performed scenes.

Note

Three hours recitation per week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

THTRE 201 - Drugs and Alcohol in Theatre and Film**Credits 3**

Exploration of alcohol and drug use as depicted on stage and in film.

Repeat for Credit

N

Typically Offered

Fall or Spring

THTRE 202 - Taboo! Transgression and Censorship in Theatre and Film**Credits 3**

An examination of the cultural controversies surrounding theatrical and cinematic productions.

Repeat for Credit

N

Typically Offered

Fall or Spring

THTRE 203 - Stage to Screen: Theatre into Film**Credits 3**

Explores the adaptation of theatrical works into motion pictures.

Repeat for Credit

N

Typically Offered

Fall or Spring

THTRE 205 - Contemporary American Theatre**Credits 3**

Investigation of contemporary American work of dramatic literature and Theatre from the 1990s to the present.

Repeat for Credit

N

Typically Offered

Fall or Spring

THTRE 211 - Run Crew**Credits 0-2**

Work on run crew (sets, props, light or sound board) for theatrical production.

Repeat for Credit

Y

Requisites

Prerequisite: concurrently enrolled with THTRE 369.

Corequisite: THTRE 369.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 212 - Wardrobe Crew**Credits 1**

Work on wardrobe crew for a theatrical production.

Repeat for Credit

N

Requisites

Corequisite: THTRE 368 or may be taken alone.

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 220 - Musical Theatre History**Credits 3**

Surveys the history of musical theatre.

Repeat for Credit

N

Typically Offered

Fall or Spring

THTRE 235 - Introduction to the Art of Film**Credits 3**

Survey of Cinema, including history, analysis and the process of production. Will include film screenings outside of regular class meetings.

Repeat for Credit

N

Typically Offered

Spring, Summer

THTRE 260 - Stage Movement**Credits 3**

A study of the technique of stage movement and an investigation of the language of gesture.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

THTRE 263 - Oral Interpretation of Literature**Credits 3**

Techniques of reading from the printed page, selecting portions from various forms of literature, including narrative poetry, essay, lyric, sonnet, nonfictional prose, scenes from plays, and selected short stories.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

THTRE 265 - Fundamentals of Improvisation I, II**Credits 3**

Introduction to the techniques of improvisation with the emphasis upon practical participation.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

THTRE 268 - Techniques of Makeup**Credits 1**

Techniques of makeup for the stage.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 269 - Fundamentals of Technical Production

Credits 3

Basic techniques, equipment and materials used in scenery construction and theatrical drafting.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

THTRE 270 - Introduction to Theatre

Credits 3

A comprehensive introduction to theatre: basic elements of theatre and theatre production, theatre history, dramatic literature, multicultural theatre traditions and perspectives, and the theatre experience.

Repeat for Credit

N

Typically Offered

Other

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Historical Perspectives

THTRE 271 - Intermediate Acting

Credits 3

Emphasis upon expanding the actor's capabilities through

more advanced scene work and character study.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Ethical Reasoning and Responsibility

THTRE 280 - Script Analysis

Credits 3

Examination of the play script to develop a common vocabulary and method for analyzing a script.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 299 - Vocal Expression for Actors

Credits 3

Study and application of vocal techniques for stage productions; emphasis on development of the actor's vocal mechanism.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 344 - Storytelling

Credits 2

Techniques of storytelling to people of all ages. History and cultural importance of storytelling. Fictional and personal storytelling will be covered.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 364 - Scene Painting**Credits 3**

Practical application of painting techniques for the stage.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

THTRE 366 - Fundamentals of Theatre Management**Credits 3**

Non-profit theatre management, including budgeting, marketing, box office, and development practices, plus examination of relevant history.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

THTRE 369 - Fundamentals of Theatrical Design**Credits 3**

An exploration of the four areas of stage design: sets, lights, costumes, and sound. Includes examination of

relevant history and technology in these areas. Emphasis is on the design process and design development.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Aesthetic Interpretation

THTRE 475 - Opera Workshop**Credits 1-6**

Principles and techniques of operatic and musical theatre production, with emphasis on class rehearsal and performance of selected scenes from opera and musical drama; brief survey of the history of opera.

Note

Offered jointly by the Department of Communication Studies and School of Music, Theatre and Dance.

Repeat for Credit

N

Typically Offered

Other

Crosslisted

MUSIC 475

K-State 8

Aesthetic Interpretation

THTRE 499 - Honors Project**Credits 3**

Honors Project

Note

Open only to Arts & Sciences students who are active members of the University Honors Program.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

THTRE 503 - Theatre for Young Audiences (TYA) in Production

Credits 3

Students will gain insight into the philosophies, practicalities, and processes of developing and producing Theatre for Young Audiences (TYA).

Repeat for Credit

Y

Typically Offered

Fall or Spring

THTRE 504 - Stage Combat

Credits 3

Focuses on specific stage combat disciplines and techniques.

Repeat for Credit

Y

Requisites

Prerequisite: Theatre 261

Typically Offered

Fall or Spring

THTRE 552 - Sound Design

Credits 3

Introduces the student to the fundamental processes involved in Sound Design.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

THTRE 560 - Advanced Stage Movement

Credits 3

Study in the physical development of character and advanced techniques of stage movement.

Repeat for Credit

Y

Typically Offered

Other

THTRE 563 - Stage Management

Credits 3

Theory and practice of stage management in the professional and nonprofessional theatre. Emphasis is on the organization of all areas of theatre knowledge needed for the running of theatrical productions.

Repeat for Credit

N

Typically Offered

Fall, Spring

THTRE 565 - Principles of Directing

Credits 3

Principles, processes and techniques of directing for the theatre.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 171.

Typically Offered

Other

THTRE 566 - Rehearsal Techniques

Credits 0-12

A laboratory course for students enrolled in performance and production classes.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

K-State 8

Aesthetic Interpretation

THTRE 567 - Costume Design

Credits 3

The theory and practice of costume design for stage.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 367.

Typically Offered

Fall

THTRE 568 - Scene Design

Credits 3

Examination of the role of scene design in theatre, principles and techniques of design. Development, presentation, and synthesis of design images with the scripted play.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 368 and THTRE 369.

Typically Offered

Other

THTRE 569 - Advanced Technical Production

Credits 3

Independent study in advanced technical theatre problems.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 368.

Typically Offered

Fall, Spring

THTRE 572 - History of Theatre I

Credits 3

A survey of the development of the theatre from ancient times to 1700.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 370.

Typically Offered

Spring

THTRE 573 - History of Theatre II

Credits 3

A survey of the development of the theatre from 1700 to the present.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing or consent of instructor.

Typically Offered

Fall

THTRE 575 - Dramaturgy

Credits 3

An introduction to the theory and practice of dramaturgy, including a survey of contemporary critical theories as they apply to the work of the dramaturg.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 270

Typically Offered

Fall or Spring

THTRE 579 - Lighting Design

Credits 3

Theory and practice of theatrical lighting design, control systems, projection equipment, and lighting consulting. Production work with KSU Theatre season required.

Repeat for Credit

N

Typically Offered

Spring

THTRE 580 - Music Theatre Workshop**Credits 0-1**

Principles and techniques of musical theatre production with emphasis on rehearsal and performance of selected scenes from musical theatre. Dance, music, and theatre are studied as integrated elements within the musical theatre genre. Culminates in a public performance.

Note

Course may be repeated twice for credit.

Repeat for Credit

Y

Requisites

Prerequisite: two semesters of voice; THTRE 171; and DANCE 280; or consent of instructor.

Typically Offered

Spring

THTRE 599 - Senior Seminar**Credits 3**

Students in their final year of study will develop skills for professional presentation and create a portfolio or audition based on the standards developed for the URTA National Unified Auditions/Interviews.

Repeat for Credit

N

Typically Offered

Fall, Spring

THTRE 610 - Internship in Theatre**Credits 0-6**

Supervised participation in an internship at a professional theatre.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 171 or THTRE 368; junior standing and consent of supervising faculty member and approval of faculty.

Typically Offered

Fall, Spring, Summer

THTRE 630 - Topics in Theatre**Credits 1-4**

Selected topics in theatre.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and consent of instructor.

Typically Offered

Fall, Spring, Summer

THTRE 661 - Professional Development**Credits 1**

Study of audition techniques including supervised preparation of appropriate material. Business aspects of professional theatre, including unions, contracts, and professional ethics.

Repeat for Credit

N

Requisites

Prerequisite: 12 hours in theatre, music, and/or dance.

Typically Offered

Fall

THTRE 662 - Playwriting**Credits 3**

Theoretical study and practical application of techniques of playwriting with regard to plot, characters, and production; emphasis on the one-act form.

Repeat for Credit

N

Typically Offered

Other

THTRE 663 - Solo Performance**Credits 3**

Students create their own solo performance piece through developing and rehearsing a script. Students will create drafts, conduct rehearsals, and culminate with a final performance of their own work.

Repeat for Credit

Y

Typically Offered

Fall or Spring

THTRE 664 - Creative Drama**Credits 3**

The development of creative imagination and personal well-being through theatre games, improvisation, storytelling, and puppetry for use in educational and recreational settings.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Other

THTRE 665 - Drama Therapy with Special Populations**Credits 3**

The therapeutic uses of drama in the development of creative imagination, self expression, and social relatedness with special populations such as clients who have developmental disabilities, physical disabilities, health issues, or are aging.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall, Spring

THTRE 667 - Period Styles for the Theatre 1**Credits 3**

Survey of historical styles of architecture, furnishings, and clothing in relation to theatrical design and the history of the theatre from the Greeks to 1800.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 572 or concurrent enrollment.

Typically Offered

Spring

THTRE 668 - Period Styles for the Theatre 2**Credits 3**

Survey of historical styles of architecture, furnishings, and clothing in relation to theatrical design and the history of the theatre from 1800 to present.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 573 or concurrent enrollment.

Typically Offered

Fall

THTRE 670 - Playback Theatre**Credits 1-3**

Improvisational theater forms in which actors listen to stories told by audience and improvisationally act the story out. Students will learn playback acting forms and how to conduct a session. Playback is often used as a technique by drama therapists in performance and in therapy sessions.

Note

Course maybe repeated for up to 6 hours.

Repeat for Credit

Y

Typically Offered
Fall, Spring, Summer

THTRE 672 - American Ethnic Theatre

Credits 3

Drama and stagecraft of ethnic groups in the United States, including the theatre of African, Asian, Hispanic, Jewish, and Native Americans.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing.

Typically Offered
Other

THTRE 673 - Theatre for Conflict Resolution

Credits 3

Drama and theatre techniques used to explore the nature of conflict and how to promote collaboration through action.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing.

Typically Offered
Summer

THTRE 674 - Drama Therapy with Adolescents

Credits 3

The therapeutic uses of drama with adolescents, including normal development, youth-at-risk, ESL, SED, and BD adolescents.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing.

Typically Offered
Summer

THTRE 675 - Drama Therapy with Older Adults

Credits 1-3

The therapeutic uses of drama with older adults, focusing on the development of life review, social relatedness, and creative self-expression in the here and now.

Repeat for Credit
N

Requisites
Prerequisite: Junior standing.

Typically Offered
Summer

THTRE 710 - Practicum in Theatre

Credits 0-6

Supervised participation in a position of major responsibility.

Repeat for Credit
Y

Requisites
Prerequisite: THTRE 160 or THTRE 171 or THTRE 368; junior standing; consent of supervising faculty member and approval of faculty members are required.

Typically Offered
Other

THTRE 711 - Topics in Technical Theatre

Credits 3

Selected topics in creative techniques and investigation for technical theatre.

Repeat for Credit
Y

Requisites
Prerequisite: THTRE 269 and consent of instructor.

Typically Offered
Other

THTRE 712 - Theatre Management

Credits 3

Theatre management, promotion, finance, organization; emphasis on contract negotiations and use of facilities.

Repeat for Credit

N

Typically Offered

Other

THTRE 761 - Advanced Acting

Credits 3

Studies in style, technique, and characterization.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 271 and consent of instructor.

Typically Offered

Other

THTRE 762 - Advanced Playwriting

Credits 3

Further study in the writing of drama; emphasis on problems of writing the full-length play.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 662.

Typically Offered

Other

Crosslisted

ENGL 762

THTRE 763 - Advanced Acting: Consent and Intimacy in Performance

Credits 3

An in-depth examination and practice in consent and intimacy in performance. Work will cover the language, process and best practices of Intimacy Direction and Coordination.

Repeat for Credit

N

Typically Offered

Fall or Spring

THTRE 765 - Practice in Directing

Credits 3

A lecture-lab course with emphasis on directing dramatic productions under performance conditions.

Note

Consent of instructor

Repeat for Credit

Y

Typically Offered

Other

THTRE 780 - Theatrical Design Studio

Credits 0-3

Advanced problems in conceptualization and realization of design, including sets, costumes, lights and technical production. Emphasis on advanced techniques in research, analysis, and production problems.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 567, THTRE 568, THTRE 569, or THTRE 579.

Typically Offered

Fall, Spring

THTRE 782 - Women in Theatre

Credits 3

A history of the contributions made by women in theatre as playwrights, managers, directors, and performers; contemporary women in theatre and their experiments in

expressing women's consciousness.

Repeat for Credit

N

Typically Offered

Other

THTRE 783 - Practice in Acting

Credits 3

Advanced studies in characterization with emphasis on communicating with the director. Taught in conjunction with the Practice in Directing workshop.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 271 and consent of instructor.

Typically Offered

Other

THTRE 784 - Psychodrama

Credits 3

Theory and practice of Psychodrama as a treatment modality for use in Drama Therapy.

Repeat for Credit

N

Typically Offered

Other

THTRE 785 - Sociodrama

Credits 3

Theory and practice of Sociodrama as a therapeutic and educational modality for use in Drama Therapy.

Repeat for Credit

N

Typically Offered

Other

THTRE 799 - Projects in Theatre

Credits 1-4

Individual guided work in selected area.

Note

Only 3 hours may be applied to MA.

Repeat for Credit

Y

Requisites

Prerequisite: Junior standing and consent of instructor.

Typically Offered

Fall, Spring

THTRE 800 - Introduction to Graduate Studies in Theatre: Library, Research, and Information Skills

Credits 1-3

Skills for accessing research tools and resources needed in the age of the internet, along with instruction on citations, literature reviews, and other formatting necessary for graduate research papers.

Repeat for Credit

N

Typically Offered

Other

THTRE 810 - Survey of Research in Drama Therapy

Credits 3

Basic terminology, concepts, and principles underlying research in drama therapy and the helping fields.

Repeat for Credit

N

Typically Offered

Fall, Spring

THTRE 820 - Principles of Drama Therapy

Credits 3

Theory, history, and practice in the use of drama as therapy

group treatment. Survey of major drama therapy methods.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 664 or 665.

Typically Offered

Other

THTRE 830 - Creative Arts Therapies

Credits 3

Survey of five creative arts therapy modalities: drama/psychodrama, art, poetry/bibliotherapy, music, and dance/movement. Instruction in theory and hands-on experience with each modality, as well as reading, discussion and methods for using modalities interdisciplinarily.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

THTRE 840 - Play Therapy Practices and Techniques

Credits 3

The history and philosophy of, and rationale for, using play media in counseling and therapy with children and adults. Directive Play Therapy models will be explored and practiced.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

THTRE 862 - Workshop in Playwriting

Credits 3

Advanced writing of drama.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 762 or ENGL 762 or proof of equivalence. Proficiency.

Typically Offered

Other

Crosslisted

ENGL 862

THTRE 865 - Ethics and Professionalism in Drama Therapy

Credits 3

The application of ethical principles involved in the practice of drama therapy in a variety of educational and therapeutic settings.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 820 or THTRE 830.

Typically Offered

Spring, Summer

THTRE 870 - Greek and Roman Theatre

Credits 3

Studies in the drama and stagecraft of the Greek and Roman period.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 572.

Typically Offered

Other

THTRE 871 - Medieval and Baroque Theatre

Credits 3

Studies in the drama and stagecraft of the Medieval and Baroque periods.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 572.

Typically Offered

Other

THTRE 875 - Contemporary Theatre**Credits 3**

Studies in drama and stagecraft since 1968.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 573.

Typically Offered

Other

THTRE 876 - Seminar in Theatre**Credits 3**

Selected topics in theatre research.

Repeat for Credit

Y

Requisites

Prerequisite: THTRE 572 or THTRE 573.

Typically Offered

Other

THTRE 878 - History of the Physical Stage**Credits 3**

A survey course in the emergence and development of the theatre building as a distinct architectural form, with particular emphasis on the effect of the physical environment on the play.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 368.

Typically Offered

Other

THTRE 879 - Modern Theatre**Credits 3**

Studies in the drama and stagecraft of Europe and America in the period from 1870 to the present.

Repeat for Credit

N

Requisites

Prerequisite: THTRE 573.

Typically Offered

Spring-Even Years

THTRE 880 - Master's Project**Credits 3**

Major project undertaken to demonstrate competence in Drama Therapy as required for the Master's Degree.

Repeat for Credit

N

Requisites

Prerequisite: Sixteen hours of graduate credit in theatre.

Typically Offered

Fall, Summer

UAS 114 - Remote Pilot Certification for UAS**Credits 2**

This course helps prepare students to become an FAA-Certified UAS Pilot. This course covers all knowledge topics important for a commercial UAS pilot. Once complete, the student takes the FAA's Remote Pilot in Command knowledge test.

Repeat for Credit

N

Typically Offered

Fall, Spring

UAS 115 - Introduction to Multi-Rotor Flight Lab

Credits 1

Basic through advanced flight training on multi-rotor uncrewed aircraft. This course establishes the foundation of manual flight, basic automation and features. Proficiency is built through standardized maneuvers to meet practical test standards.

Note

For portions of the course, students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Corequisite: UAS 114 or proof of a valid RPIC

Typically Offered

Fall, Spring

UAS 270 - Introduction to UAS

Credits 3

Introduction to the history of UAS and survey of current UAS platforms, terminology, challenges to airspace integration and operational theory.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

UAS 272 - UAS Safety Fundamentals

Credits 3

Introduction to aviation safety, with an emphasis on best practices for safe operation of unmanned aircraft systems. Topics include safety/risk assessments, human factors, crew resource management, aeronautical decision-making, risk management, and safety assurance.

Repeat for Credit

N

Typically Offered

Fall, Spring

UAS 275 - Small UAS Maintenance I

Credits 3

This course provides students with the knowledge and skill necessary to repair and maintain both fixed- and rotary-wing aircraft during field operations and to ensure continued airworthiness throughout the service life of the aircraft. Instruction emphasizes safe practices, provide an introduction to basic shop tools and machinery used in maintaining sUAS, and develop fundamental skills in platform fabrication and the troubleshooting/repair of the circuits, subsystems and components typically found on sUAS aircraft.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Typically Offered

Spring

UAS 280 - Multi-Rotor Construction Lab

Credits 2

This course focuses on the construction of a multi-rotor UAS. This includes gaining an understanding of individual components within the system and integrating the components into a fully functional system. Students will also test and tune the UAS once assembled.

Repeat for Credit

N

Typically Offered

Fall, Spring

UAS 285 - Small Unmanned Aircraft Maintenance II

Credits 3

This course provides students with advanced knowledge and a high level of skill in the maintenance and repair of

both fixed- and rotary-wing unmanned aircraft and associated systems. The concept of continued airworthiness is emphasized. Topics include advanced techniques in the fabrication and repair of small unmanned aircraft systems and airframes, maintenance of ground support systems and principles of electronic and integrated circuit maintenance, troubleshooting and repair.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 275.

Typically Offered

Fall

UAS 300 - UAS Powerplant Fundamentals

Credits 3

A study of the principles of operation, design features, and operating characteristics of various powerplants used in UAS. Includes inspection procedures and operational theory of current electric, piston, hybrid, and turbine propulsion systems.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

UAS 312 - UAS Flight Instructor Ground School

Credits 3

Intended to prepare the student for the role of UAS flight instructor. Focuses on the fundamentals of flight instruction. Lecture topics cover the techniques and the procedures necessary to generate, organize and present

lessons in instructional environment while building necessary skills and emphasizing aspects of instruction necessary to ensure student competencies in the areas of UAS field and flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 114 &UAS 115.

Corequisite: UAS 314.

Typically Offered

Fall

UAS 314 - Multi-rotor Instructor Flight Lab

Credits 1

This course refines advanced multi-rotor skills and provides the practical experience necessary to produce competent multi-rotor flight instructors.

Note

Two hours of lab per week. For portions of the course, students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 115

Corequisite: UAS 312 and proof of a valid Remote Pilot in Command (RPIC)

Typically Offered

Fall

UAS 353 - Command and Control Links and Circuitry

Credits 3

This course provides a detailed examination of the theory and design of UAS command and control (2C) systems and applies this knowledge to develop a thorough understanding of the principles used in the design, maintenance and repair of 2C circuits and subsystem components. Topics include design choices in component selection, circuit and overall system design concepts and troubleshooting.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 275 or consent of instructor.

Typically Offered

Fall

UAS 357 - Introduction to UAS Fixed-Wing Flight Lab**Credits 2**

Provides an introduction to the use of an external pilot (EP) console to control fixed-wing UAS. In the event of a lost communications link, avionics or autopilot failure or other emergency, the external pilot is critical to human-in-the-loop operation of the UAS in effecting a successful recovery of the aircraft. This course develops the skills necessary to ensure students are capable of conducting safe EP operation of fixed-wing UAS during adverse flight conditions.

Note

Four hours of lab per week. Students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 314.

Typically Offered

Spring

UAS 367 - Introduction to UAS Automated Fixed-Wing Flight Lab**Credits 3**

This course focuses on developing the pilot's ability to control the UAS via a computer ground control station in the crew role of air vehicle operator (AVO). Students will become proficient in conducting site surveys, building UAS flight plans, contingency planning, emergency procedures, crew resource management, and developing mission briefings. Students will also learn methods for effectively instructing fixed-wing flight operations by developing

lesson plans and conducting instructional flights.

Note

Six hours of lab per week plus individual simulator work. Students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 357 and UAS 312.

Typically Offered

Spring

UAS 373 - Small Unmanned Aircraft Design and Construction for Non-Aviators**Credits 3**

Topics include: Unmanned Aircraft System platform, payload and component design and interfacing, system and vehicle maintenance, and systems integration. Intended for non-pilot majors and those without the FAA certifications and ratings required for UAS 370.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Corequisite: UAS 270.

Typically Offered

Fall

UAS 374 - Processing Remotely Sensed Data**Credits 3**

Students are introduced to basic theory, history, and practical applications of remote sensing technology, with an emphasis on high spatial resolution multispectral aerial imagery collected using UAS. Other topics include geographic information systems, aerial image interpretation, sensor resolution, orthomosaicing, georegistration, vegetation indices, and image classification.

Repeat for Credit

N

Typically Offered

Fall

UAS 387 - UAS Safety Applications

Credits 2

This course provides students with the knowledge needed to best prepare for and conduct advanced UAS operations while staying safe. This course will cover Crew Resource Management, Human Factors, Safety Risk Mitigation strategies, and case study investigations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 115.

Typically Offered

Fall

UAS 417 - Fixed-wing Instructor Flight Lab

Credits 2

This is the culminating course intended to prepare students for roles as fixed-wing unmanned aircraft flight instructors. This course furthers develop and refine the flying skills necessary to assume control of the aircraft during adverse circumstances or unusual aircraft attitudes induced by a less experienced pilot. The fixed-wing instructor-in-training is required to demonstrate, in practice, the skills and knowledge obtained in earlier courses covering crew resource management and flight instruction as well as achievement of a high level of piloting skills. Upon successful completion of this course, the student is qualified as a K-State instructor on fixed-wing platforms and as pilot-in-command/operator-in-command during research missions authorized by the unmanned aircraft systems program.

Note

Four hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: UAS 367.

Typically Offered

Spring

UAS 461 - Autonomous Flight Simulation Lab

Credits 1

This course provides the student with simulation on high-end, sophisticated, proprietary autopilot systems in preparation for field operations flying aircraft equipped with similar autopilot/avionics packages.

Note

To hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: UAS 370.

Corequisite: UAS 465.

Typically Offered

Spring

UAS 463 - Introduction to Autopilots and Mission Planning for Non-Aviators

Credits 3

Focus is on mission planning and operations within the context of the simulated environment. Students are introduced to commercial, open source and/or proprietary autopilots and are required to complete simulated training missions with the ultimate goal of demonstrating skills competency and knowledge acquisition through evaluations of proficiency (e.g., through "check-outs" or "check-rides"). Students integrate autopilots into selected fixed-wing platforms. Intended for non-UAS majors and those without the FAA certifications and ratings required for UAS 370, UAS 461 and UAS 465.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 373.

Typically Offered
Spring

UAS 465 - Fixed-Wing Construction Lab and Autopilot Integration

Credits 3

In this course, students will build a fixed-wing UAS. After completing the build and conducting a successful flight, students will integrate an autopilot into their platform. Using open source ground station software and commercial-off-the-shelf (COTS), open source autopilot firmware and hardware, students learn techniques for integrating autopilots into their selected fixed-wing platform and for exploring precision autonomous flight in preparation for conducting field operations to acquire remotely sensed data.

Repeat for Credit
N

Requisites
Prerequisite: UAS 280

Typically Offered
Spring

UAS 467 - Small Unmanned Aircraft Systems Payloads

Credits 3

Course content covers various types of sUAS sensor packages and appropriate applications, preparing the student to properly select sensors based on mission profile, data needs and mission objectives. Students develop, design and construct a payload for integration into previously constructed aircraft in preparation for conducting missions to obtain data for post-flight processing.

Note
Studio format incorporating lecture and lab elements.

Repeat for Credit
N

Requisites
Prerequisite: UAS 465.

Typically Offered
Fall

UAS 470 - Flight and Field Operations

Credits 3

Emphasis is on advanced unmanned aircraft systems operations in the live flight environment with a focus on safety and crew resource management. Emphasis is on experiential learning. Students are required to travel to an area designated for flight operations.

Note
Studio format incorporating predominantly lab components with less emphasis on lecture.

Repeat for Credit
N

Requisites
Prerequisite: UAS 461 and UAS 465.

Typically Offered
Fall

UAS 471 - Advanced Fixed-Wing Operations Flight Lab

Credits 2

This course provides students with training on a high-end sophisticated, proprietary autopilot system. Course delivery will focus on safety and crew resource management. Emphasis is on experiential learning.

Note
3 hours of lab per week. Students are required to travel to an area designated for flight operations.

Repeat for Credit
N

Requisites
Prerequisite: UAS 357.

Typically Offered
Fall

UAS 475 - Data Acquisition and Post-processing

Credits 3

Students build upon the basic image processing skills gained in the previous course, expanding their knowledge

of common aerial image data processing tasks using industry-standard software packages. Aerial data collection methodologies are introduced, including consideration of aerial mission flight parameters.

Repeat for Credit

N

Requisites

Prerequisite: UAS 115 and UAS 374.

Typically Offered

Spring

UAS 476 - Low Altitude Remote Sensing Project Development

Credits 3

Students gain practical experience collecting and processing their own high resolution aerial datasets using multirotor and/or fixed-wing UAS, and are instructed in proven workflows for successful commercial UAS mapping operations. The topic of payload selection and integration will enable a project to collect data for subsequent processing.

Repeat for Credit

N

Requisites

Prerequisite: UAS 475

Typically Offered

Fall

UAS 477 - Fundamentals of Thermography

Credits 3

Students learn the process of acquiring and interpreting radiometrically calibrated thermal imagery, including real-time analysis and ortho mosaicking. Specific topics include history of thermal sensors, best practices for calibration and mission planning, and imagery post-processing methods, analysis, and deliverables. This course will prepare students to enroll in a Level 1 Thermography Certification course.

Note

Elective option for Aeronautical Technology BS–Unmanned Aircraft Systems Option
Course within the UAS Data Analytics Certificate

Repeat for Credit

N

Requisites

Prerequisite: UAS 374

Typically Offered

Fall, Spring

UAS 478 - Fundamentals of LIDAR

Credits 3

Students learn how Light Detection and Ranging (LiDAR) systems are used in an sUAS setting and demonstrate their ability to collect, process, and analyze LiDAR data in various class, group, and individual projects. Specific topics include sUAS LiDAR integration, Global Positioning Systems (GPS), mission planning, post-processing methods and software, and final product deliverables.

Note

Elective option for Aeronautical Technology BS–Unmanned Aircraft Systems Option
Course within the UAS Data Analytics Certificate

Repeat for Credit

N

Requisites

Prerequisite: UAS 374

Typically Offered

Fall, Spring

UAS 480 - UAS Senior Design Project I

Credits 1

Culminating experience is a sustained occasion when students will put into independent practice the intellectual, creative, and expressive skills/knowledge they have cultivated in their undergraduate curriculum. In this course students integrate discipline-specific knowledge in addition to communication and inquiry methods to solve problems and communicate mastery of their respective area of interest.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Fall

UAS 481 - UAS Senior Design Project II

Credits 2

A continuation of UAS 480. Includes the implementation, testing, and delivery of the project initiated in UAS 480 UAS Senior Design I. Significant milestones are the completion of checkpoints outlined in the project proposal prepared in UAS 480 along with implementation, final report and final presentation.

Repeat for Credit

N

Requisites

Prerequisite: UAS 480

Typically Offered

Spring

UFS 640 - Topics in Urban Food Systems

Credits 1-3

Selected topics in urban food systems.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

UFS 791 - Urban Agriculture

Credits 2

Students will become familiar with a wide variety of urban agriculture types and production systems utilized in urban settings. The course will include background readings, case studies, guest speakers, student-facilitated class discussions, and lectures.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

Crosslisted

HORT 791

UFS 794 - Urban Food Systems

Credits 2

This course will cover all components of urban food systems through the lens of food security, food justice, access, policy, and community planning. Students will gain skills in grant-writing, non-profit planning and management, and working with urban policy and planning boards.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

HORT 794

UFS 796 - Professional Development in Urban Food Systems

Credits 1

A team instructed seminar course that provides urban food systems students with a suite of skills complimentary to their research experience but still necessary for professional career success.

Repeat for Credit

N

Typically Offered

Fall, Spring

Crosslisted

HORT 796

UFS 798 - Urban Food Systems Field Experience

Credits 1

Students will engage in a work experience at Willow Lake Student Farm, Olathe Horticulture Research and Extension

Center or another approved site. Three hours of field work per week are required.

Repeat for Credit
Y

Typically Offered
Fall, Summer

UHP 189 - Honors First-Year Seminar

Credits 1

Selected topics seminar for new members of the University Honors Program. Focal topics will vary by section, but all seminars will overview student requirements and consider potential benefits and opportunities associated with the program.

Repeat for Credit
N

Requisites
Prerequisite: Admitted to the university honors program or instructor permission.

Typically Offered
Fall, Spring

VAP 788 - Basic and Applied Pharmacokinetics

Credits 3

Provides a conceptual and quantitative understanding of the absorption, distribution, metabolism, and excretion of drugs and factors that influence these processes.

Repeat for Credit
Y

Typically Offered
Fall

Crosslisted
AP 788 Basic & Applied Pharmacokinetics

VAP 802 - Advanced Toxicology

Credits 3-6

Advanced Toxicology

Repeat for Credit
N

Typically Offered
Other

VAP 805 - Cell Physiology

Credits 3

Functions of the animal body are described with a primary focus at the cellular and molecular level with correlations to clinical topics. Course content builds on knowledge of chemistry, biochemistry, physics and biology. Basic physiological and pathophysiological mechanisms are examined in the context of the cell environment, intermediary metabolism and cell signaling.

Repeat for Credit
N

Requisites
First year standing in DVM degree or permission of course instructors

Typically Offered
Fall

VAP 806 - Gross Anatomy I

Credits 6

Gross dissection of the dog with comparative aspects of the cat.

Note
Two hours lecture and nine hours lab a week.

Repeat for Credit
N

Requisites
Prerequisite: First-year standing in College of Veterinary Medicine or consent of the instructor.

Typically Offered
Fall

VAP 807 - Veterinary Systems 1

Credits 6

Microstructure and function of the cardiovascular, endocrine, respiratory, and renal systems of domestic animals with emphasis on physiologic control mechanisms, interrelationships of body systems, and criteria for evaluating animal health.

Repeat for Credit

N

Requisites

Standing as a 1st year veterinary student or equivalent

Typically Offered

Fall

VAP 808 - Introduction to Veterinary Medicine and Biomedical Research: Concepts and Values

Credits 1

This course is intended to provide first-year students an opportunity to experience the depth of veterinary/biomedical research required to advance the practice of veterinary medicine, and advance the field of medicine in general. The students will examine the challenges of conducting 1) foundational and translation research (genetic/genomic and mechanistic research), 2) foundational and applications to clinical research 3) population and observational research (epidemiology, prospective clinical trials, retrospective studies), 4) pharmacologic research (the impact of pharmacology on the biomedical sciences). The students will examine relevant connections, consider conceptual relationships, and critically evaluate integrative issues germane to both the practice of and the innovative progress of veterinary medicine. Faculty members in the Departments of A&P, DM/P, and CS, will present topical overviews, based on their professional experiences. This will be designed to connect and integrate fundamental principles and relationships between research and clinical application. These presentations provide examples of the fundamental requirements for clinical therapies and also provide examples of how innovative science leads to new therapies for long standing clinical disease. Additionally, students will learn the tools required to search relevant topic to their career paths within the medical literature. Finally, drawing on the multidisciplinary literature presented by faculty, students will explore the challenges in conducting genetic/genomic research, using genomic information, implementing research results to clinical practice, as well as addressing the social, legal, and professional policies that are emerging from new research.

Students will be expected to do reading and to complete online worksheets and present their findings/opinions in class. Class time will be devoted to presentations and to discussion of readings and related current events.

Repeat for Credit

N

Typically Offered

Fall

VAP 816 - Gross Anatomy II

Credits 5

Gross dissection of the horse and ruminant with comparative aspects of the pig, laboratory animals, and the chicken.

Note

Three hours lecture and nine hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: VAP 806.

Typically Offered

Spring

VAP 817 - Veterinary Systems 2

Credits 4

Microstructure and function of the reproductive and digestive systems of domestic animals with emphasis on physiologic control mechanisms, interrelationships of body systems, and criteria for evaluating animal health.

Repeat for Credit

N

Requisites

Standing as 1st year veterinary student or equivalent

Typically Offered

Spring

VAP 835 - Animal Care and Welfare

Credits 1

This course will describe the veterinarian's role in protecting the health and welfare of animals. Students will be introduced to the major philosophical positions of animal use. The evolution of animal welfare science will be discussed and students will learn how to assess the welfare of companion, laboratory, zoo and food animals. Common causes of reduced animal welfare and ethical dilemmas will be covered.

Repeat for Credit

N

Typically Offered

Fall

Crosslisted

AP 835 Animal Care and Welfare

VAP 844 - Veterinary Pharmacology I**Credits 4**

The basic principles of pharmacology, the interactions of drugs and living systems including fundamental principles of pharmacokinetics, pharmacodynamics, receptor-coupling, and mechanisms of action. A systems-based approach to drug classes will be emphasized.

Note

Four hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: VAP 804 and VAP 818 or equivalent.

Typically Offered

Fall

VAP 846 - Veterinary Pharmacology II**Credits 2**

The basic principles of pharmacology, the relationship of drug actions and interactions on physiological principles and pathophysiological conditions. Pharmacokinetics, pharmacodynamics, and a systems-based approach to drug classes will be emphasized.

Repeat for Credit

N

Requisites

Prerequisite: Student must have a "C" or higher in VAP 844 and DMP 712.

Typically Offered

Spring

VAP 871 - Toxicology**Credits 3**

Effects of harmful substances on the animal body. Emphasis placed on toxicologic principles and management of the poisoned patient.

Repeat for Credit

N

Requisites

Prerequisite: 3rd year standing in the College of Veterinary Medicine or graduate students in the College of Veterinary Medicine.

Typically Offered

Spring

VAP 888 - Practical Use and Interpretation of Veterinary Scientific Literature**Credits 1**

Designed primarily for veterinary students in the first, second or third year of the DVM curriculum. The course is intended to teach literature search skills, organization of your own literature library, and critical evaluation of clinical reports and research literature. The format is lecture as well as small group and online discussion. Students are required to contribute to classroom and online discussions and to complete written assignments.

Repeat for Credit

Y

Typically Offered

Fall

VAP 891 - A&P Veterinary Medicine Elective Graded

Credits .5-3

Special topics for veterinary students in the disciplines offered by the department.

Note

Lecture or combination lecture with lab.

Repeat for Credit

Y

Requisites

Prerequisite: 1st, 2nd, or 3rd year students in Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VAP 893 - Introduction to Nanomedicine**Credits 1**

This course is a brief introduction to nanomaterials and nanomedicine with a focus on clinical applications of nanotechnology. The course presents basic principles of nanotechnology; current clinical applications of nanomedicine; future horizons in nanomedicine.

Repeat for Credit

N

Typically Offered

Spring

VAP 894 - Comparative Embryology**Credits 1**

An overview of development anatomy as it relates to clinically important developmental defects and/or normal structure and function of common domestic animals.

Repeat for Credit

N

Requisites

Prerequisites: Enrollment in the One Year Master's (non-thesis M.S. in Veterinary Biomedical Science) program or permission of instructor.

Typically Offered

Spring

VAP 897 - Problems in Animal Welfare**Credits 1**

This course will expand on the role of veterinarians in the field of animal welfare. Students will be introduced to the major philosophical positions of animal use. The evolution of animal welfare science will be discussed and students will learn how to assess the welfare of companion, laboratory, zoo and food animals. Contemporary issues in animal welfare will also be explored.

Repeat for Credit

N

Requisites

Recommended Prerequisite: VAP835 or AP835

Typically Offered

Spring

VAP 900 - Advanced Clinical Anatomy and Teaching Practicum**Credits 2**

This 2-week clinical anatomy rotation elective is designed for DVM students seeking advanced knowledge and teaching experience in veterinary anatomy. Participants will enhance their understanding of regional and systemic anatomy through hands-on dissection, journal club presentations, and the development of clinical teaching materials. This course is especially beneficial for those with interests in surgical specialties, radiology, neurology, and emergency medicine.

Repeat for Credit

N

Requisites

DVM 4th Year Standing

Typically Offered

Fall, Spring

VCS 809 - Veterinary Clinical and Professional Skills I**Credits 1**

The course will be taught during the fall semester as a required introductory level course for first year veterinary students. This is the first in a series of foundational courses

designed to introduce students to key clinical skills, including communication and critical thinking, that they will encounter in a clinical setting and to provide students with a problem-based approach to learning.

Repeat for Credit

N

Requisites

Prerequisite: First year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VCS 816 - Veterinary Clinical Skills and Professional Skills II**Credits 1**

The course will be taught during the spring semester as a required introductory level course for first year veterinary students.

The primary objective of the course is to provide students with an opportunity to learn normal animal behavior for the most commonly evaluated large animal species in clinical practice (the horse and the cow); to safely handle and restrain them; and to practice basic physical examination skills. A secondary objective of the course is to introduce students to the basic principles of biosecurity, sterile technique, venipuncture, and intravenous catheterization.

In addition, students will build onto first-semester instruction in clinical communication, written documentation within the medical record, and introductory surgical skills.

The course will include introductory lectures as well as structured and self-directed laboratory sessions that will involve both live animals and non-animal teaching models.

Note

Two 1.5-hour laboratory sessions will occur weekly.

Repeat for Credit

N

Requisites

Prerequisite: VCS 809.

Typically Offered

Spring

VCS 819 - Veterinary Medicine in a Foreign Context**Credits 1**

Lecture and discussion-based course preparing students to enroll in CS 821. Students will investigate agricultural and veterinary medicine in a specific country.

Repeat for Credit

Y

Requisites

Pre-requisite: Commitment to enroll in VCS 821 International Veterinary Study Tours and enrolled as 1st, 2nd, or 3rd year student in the College of Veterinary Medicine. Additional students admitted with discretion of the faculty member leading VCS 821.

Typically Offered

Spring

VCS 820 - Topics in Global Veterinary Medicine**Credits 1**

An overview of the role of veterinarians around the world. Topics include international uses and attitudes about animals, problems the world faces pertaining to livestock production, and social tensions. One hour lecture each week.

Note

One hour lecture each week.

Repeat for Credit

N

Requisites

Prerequisite: 1st or 2nd year standing in the College of Veterinary Medicine, or enrolled as a graduate student with instructor permission.

Typically Offered

Spring

VCS 821 - International Vet Study Tours**Credits 1**

Faculty-led trip for students to explore veterinary medicine in a foreign country. Prior to travel, students will learn

about the country through lectures, research, presentations. During the trip they will interact with nationals in the veterinary profession and experience the culture.

Repeat for Credit

Y

Requisites

Prerequisite: Successful completion of VCS 819 in the semester immediately preceding. Enrolled as a 1st-3rd year or grad student in the College of Vet Med. Additional students admitted with discretion of faculty leading the tour.

Typically Offered

Summer

VCS 822 - Introduction to Sustainable Beef Systems**Credits 1**

This course provides the fundamentals of assessing sustainability in beef production systems through evaluation of aspects of sustainability pillars, people, planet and profit, in each sector of the beef value chain. The course focuses on principles of sustainable food systems, beef cattle production practices, systems thinking, and impacts of food choices.

Repeat for Credit

N

Requisites

Prerequisite: 1st, 2nd, or 3rd Year Standing in the College of Veterinary Medicine.

Typically Offered

Fall

Crosslisted

CS 822

VCS 832 - Antimicrobial Resistance in Bacteria: A One Health Perspective**Credits 1**

This course addresses the concept of One Health which integrates the knowledge of the biological elements necessary for the evolution of antimicrobial resistance (AMR) in bacteria and other factors (animals, humans, environments, socioeconomic features, and behavioral

changes) involved in its emergence and dissemination.

Repeat for Credit

N

Requisites

Prerequisite: 1st, 2nd, or 3rd Year Standing in the College of Veterinary Medicine

Typically Offered

Fall

Crosslisted

CS 832 Antimicrobial Resistance in Bacteria: A One Health Perspective

VCS 839 - Veterinary Clinical and Professional Skills III**Credits 1**

A continuation of Veterinary Clinical and Professional Skills II. Introduces how to perform common diagnostic tests in clinical practice and interpret them. Builds upon basic palpation skills to practice isolating specific tissues and organs. Applies surgical principles to the practice of advanced suture patterns.

Repeat for Credit

N

Requisites

Prerequisite: VCS 809 and VCS 816

Typically Offered

Fall

VCS 840 - Communication with the Agricultural Worker**Credits 2**

An elective course focused on improving communications between veterinarians and animal caretakers in production agriculture and equine industries. The course will use face to face discussions and online seminars in KSOL to teach communications skills with a focus on common terminology and vocabulary necessary for effective communication. Audio-visual teaching utilizing immersion philosophy is utilized to provide the material course work.

Repeat for Credit

N

Requisites

Prerequisite: 2nd or 3rd year standing in the College of Veterinary Medicine or enrolled as a graduate student.

Typically Offered

Fall, Spring

VCS 843 - Introduction to Veterinary Surgery**Credits 2**

The purpose of VCS 843 Introduction to Veterinary Surgery is to introduce the second year veterinary student to small animal surgical principles, specific small animal surgical conditions, their clinical signs, appropriate diagnostic evaluation, surgical treatment, pre- and post-operative care, and complications. Clinical application and reasoning will also be a focus. This course will establish a foundation of knowledge that students will build on in VCS 863 Veterinary Surgery I in the fall semester of the third year.

Repeat for Credit

N

Requisites

2nd Year Standing in the College of Veterinary Medicine

Typically Offered

Spring

VCS 844 - Medicine I**Credits 4**

Consideration of medical and pathophysiologic aspects of diseases affecting the urinary, endocrine, integumentary, respiratory, hemic, and neuromuscular systems.

Note

Four one hour lectures per week.

Repeat for Credit

N

Requisites

Prerequisite: Second-year standing in the College of Veterinary Medicine.

Typically Offered

Spring

VCS 845 - Radiology**Credits 3**

The theory and principles of x-rays, production and interpretation of radiographs and exposure factors, special radiographic methods, film storage and handling, processing, safety measures, and biologic effects of radiation.

Note

Two hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Second-year standing in the College of Veterinary Medicine.

Typically Offered

Spring

VCS 846 - Veterinary Clinical and Professional IV**Credits 1**

A continuation of Veterinary Clinical and Professional Skills III. Introduces advanced organ-specific examination techniques including otoscopy and ophthalmoscopy. Expands the concepts of diagnostic testing and diagnostic test interpretation. Prepares students for surgical anesthesia and anesthetic monitoring through the use of non-animal teaching models.

Repeat for Credit

N

Requisites

Prerequisites: VCS 809, VCS 816, and VCS 839.

Typically Offered

Spring

VCS 861 - Food Animal Medicine**Credits 4**

A study of the etiology clinical signs, diagnosis, treatment and control of diseases which affect cattle, swine, and sheep.

Note

Four hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VCS 862 - Theriogenology**Credits 3**

Consideration of prevention, diagnosis, and treatment of disease, and maintenance of health and productivity of the genital tract of domestic animals. Three hours of lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in College of Veterinary Medicine or graduate student.

Typically Offered

Fall

VCS 863 - Veterinary Surgery I**Credits 3**

Introduction to the basics of veterinary anesthesia, surgical techniques, and patient management by a systems design. Problems common to all species of domestic animals will be presented to provide foundations of surgical knowledge and experience.

Note

Three hours of lecture.

Repeat for Credit

N

Requisites

Prerequisite: Satisfactory completion of all required second year veterinary courses.

Typically Offered

Fall

VCS 864 - Applied Clinical Skills and Surgical Laboratories**Credits 3**

The VCS 864 Applied Clinical Skills and Surgical Laboratories course is a hands-on live animal laboratory course with multiple objectives. This course teaches basic clinical skills including small animal handling, physical examination, sample collection, diagnostic procedures, patient assessment and management, medical records, and clinical communication. Additionally, the course will teach basics of small animal veterinary anesthesia, surgical techniques, and live animal patient management. Skills taught in this course will build on introductory skills learned in 1st and 2nd year clinical skills courses. The student will progress to performing general anesthesia, surgery (spays and neuters), and perioperative care for humane shelter animals. The skills taught in this course will be used as a framework for students to continue building on during their senior year as they learn to function as effective veterinarians.

Repeat for Credit

N

Requisites

Prerequisite: Concurrent with or successful completion of VCS 863

Typically Offered

Fall

VCS 865 - Exotic Pet Medicine**Credits 2**

Entry-level knowledge base for the species likely to be encountered in a private practice setting including snakes/small reptiles, caged birds, and small mammals (ferrets, gerbils, hamsters, chinchillas).

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VCS 867 - Medicine II**Credits 4**

Consideration of the medical and pathophysiological aspects of diseases affecting the gastrointestinal, cardiovascular, and ophthalmic systems, oncology, and dentistry.

Note

Four one hour lectures per week.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VCS 868 - Artificial Intelligence in Veterinary Medicine**Credits 1**

This elective course explores the impact of artificial intelligence on the field of medicine, with a focus on veterinary applications. Students will learn about the fundamentals of AI, machine learning, and data science, and how these technologies are used to improve diagnostics, treatment planning, patient monitoring, and overall patient care. The course will also address ethical considerations, regulatory frameworks, and the future of AI in healthcare. Through lectures, case studies, and hands-on projects, students will gain a comprehensive understanding of AI's role in advancing medical and veterinary practices.

Repeat for Credit

N

Requisites

1st, 2nd, or 3rd Year Standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring

VCS 874 - Ethics and Jurisprudence**Credits 1**

Socratic ethics are discussed along with the American Veterinary Medical Association's Code of Ethics and practical situations with a fundamental ethical basis. The Kansas Practice Act is explored as an example of governance in veterinary medicine. The role of animals in humans' well being is addressed along with the philosophy of animal welfare. The law and the practicing veterinarian are discussed with emphasis upon professional liability.

Repeat for Credit

N

Requisites

Prerequisite: Third year standing in College of Veterinary Medicine.

Typically Offered

Spring

VCS 876 - Applied Large Animal Clinical Skills**Credits 1**

Demonstration, instruction and experience in physical examination and diagnostic skills necessary for routine veterinary practice.

Note

DVM Course only

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in the College of Veterinary Medicine.

Typically Offered

Spring

VCS 877 - Clinical Nutrition**Credits 2**

A focus on practical aspects of nutrition as it relates to performance, health and animal well-being of food-producing animals and, programs designed for health and well-being of small animals including exotic animals.

Nutritional aspects of the mechanisms of health and disease are taught primarily at the individual and population level with some molecular and cellular aspects included. Designed for all students to be able to properly nourish animals in their care during their career.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in the College of Veterinary Medicine or graduate student.

Typically Offered

Spring

Crosslisted

ASI 886 and AP 886

VCS 878 - Veterinary Surgery II

Credits 3

A continuation of Veterinary Surgery I. Introduction to the basics of veterinary anesthesia, surgical techniques, and patient management by a systems design. Problems common to all species of domestic animals will be presented to provide foundations of surgical knowledge and experience.

Note

Three hours lecture.

Repeat for Credit

N

Typically Offered

Spring

VCS 879 - Veterinary Surgery II Laboratory

Credits 1

A continuation of Veterinary Surgery I Lab. Introduction to the basics of veterinary anesthesia, surgical techniques, and patient management by a systems design. Problems common to all species of domestic animals will be presented to provide foundations of surgical knowledge and experience.

Note

One lab per week.

Repeat for Credit

N

Typically Offered

Spring

VCS 880 - Veterinary Business and Professional Development

Credits 1

This course provides a foundation in business management and marketing to prepare veterinary students for success in private veterinary practice. Lectures include personal marketing, business organizational structure, gauging and monitoring production, management practice finance, recruitment, personnel management, effective practice marketing (internal and external), achieving better client satisfaction and retention, and the road to practice ownership.

Repeat for Credit

N

Typically Offered

Spring

VCS 881 - Clinical Pharmacology

Credits 2

Course focuses on the clinical application of drugs in veterinary species. Clinical pharmacologists and clinicians from multiple clinical specialties will focus on commonly used drugs. Students will be expected to review and build upon their previous pharmacology and medicine courses. Emphasis will be placed on administration (including routes, dosing calculations, and methods), avoiding adverse drug reactions and interactions, evaluating patient response, written and verbal client communication, and utilizing reference resources to select and properly use veterinary therapeutics.

Repeat for Credit

N

Requisites

Prerequisite: Third-year standing in College of Veterinary Medicine.

Typically Offered

Spring

VCS 882 - Equine Medicine

Credits 3

A study of the etiology, clinical signs, diagnosis, treatment, and control of common diseases which affect horses.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: VCS 867

Typically Offered

Spring

VCS 890 - CS Veterinary Medicine Elective Aux. (Graded)

Credits 0.5-3

VCS 890 (Variable credit 0.5-3) fall, summer, and spring offering. Special topics for veterinary students in the disciplines offered by the department. Lecture or combination lecture with lab. Continuation of Topics from VCS 891.

Repeat for Credit

Y

Requisites

Prerequisite: 1st, 2nd, or 3rd year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 891 - CS Veterinary Medicine Elective

Credits .5-3

Special topics for veterinary students in the disciplines offered by the department. Topics include:

Beef Production Medicine: The role of the veterinarian in livestock production units, including interactions with producers, nutritionists, investors and others in decision analysis. Emphasis is on the professional services that veterinarians provide to beef production systems.

Emergency Medicine: Presentations of cases in the ICU or cases that were recently seen on emergency. Current literature that is relevant to the case will be discussed.

Advanced Exotic Pet Medicine: Advanced study of the diseases, medicine, and captive management of non-traditional species including companion birds, reptiles, rabbits, ferrets, and rodents.

The Basics of Bovine Theriogenology: This class is designed to provide students enrolled in the veterinary curriculum a very practical knowledge base regarding bovine reproduction.

Equine Medicine: This course is designed to be complementary to CS 710. The material presented in this class will focus on diagnostic procedures and case presentations that will not be covered in the core curriculum.

The Learning Curve of Equine Practice: Covers various aspects of equine practice, not usually covered in traditional didactic lectures, including: equine husbandry, communication issues and insurance, horse colors, genetics, and genetic related diseases, aspects of equine practice and practice management, drug and medication rules for performance horses, and preventative medicine.

Pain Management: Discussion of the mechanisms of pain, certain pain syndromes, and the drugs and techniques available to provide analgesia.

Surgical Skills: Manual surgical skills will be taught using surgical models and cadaver tissues. Students will be taught the following skills and techniques: instrument handling, speed and efficiency, hand ties, ligature under tension, suture patterns, closure under tension, anastomosis and enterotomy technique and excision of circular lesions.

Advanced Concepts in Veterinary Clinical

Anesthesia: The lectures will be divided among topics to enhance student preparation for practical clinical application of anesthetic principles in both small and large animal environments. Topics: anesthetic implications for certain disease states, management of intraoperative complications, and special topics in large animal anesthesia.

Veterinary Management of Sheep and Goats: Topic content is delivered both as online seminars via KSOL and case-based discussions and problem solving exercises in the classroom on herd management, preventive health care, nutrition, medicine, diseases, reproduction, and surgery of sheep and goats.

Veterinary Ultrasonography: Topic content will be delivered both as online seminars via KSOL and case-based discussions. The physics, basic principles of use, and common artifacts of ultrasound will be covered as it relates to veterinary diagnostic imaging. Ultrasound imaging of the thorax (non-cardiac), abdomen, musculoskeletal system, and other areas (eye, thyroid/parathyroid) will be covered, predominantly in small animals. The course will cover both normal and pathologic ultrasound findings.

Applied Small Animal Behavior: Introduction to the commonly encountered canine and feline behavior topics in veterinary medicine. Students will learn how to address these behavioral concerns through behavior modification, desensitization, counter conditioning, and psychopharmacology. An additional goal of the course is to discuss practices that reduce fear in these patients during visits to their veterinarian.

Note

Lecture or combination lecture with lab.

Repeat for Credit

Y

Requisites

Prerequisite: 1st, 2nd, or 3rd year students in Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 892 - CS Veterinary Medicine Elective Cr/NC

Credits .5-3

Special topics for veterinary students in the disciplines offered by the department. Topic Include:

Pre-Clinical Food Animal (Mixed) Practice

Mentorship: Structured one week (45 contact hours) mentorship in a large animal (bovine) practice designed to promote clinical skills training in a private practice setting with practitioners who have expressed an interest in training and mentoring veterinary students.

Pre-Clinical Small Animal Practice Mentorship: Structured one week (45 contact hours) mentorship in a small animal practice designed to promote clinical skills training in a private practice setting with practitioners who have expressed an interest in training and mentoring veterinary students.

Practicing Veterinary Medicine in a Multicultural Society: Diversity in the broadest sense of the word (cultural, racial, sexual, gender, age, religious, etc.) will be explored in the context of the practice of veterinary medicine. Understanding diversity issues can positively affect the bottom line of nearly every veterinary practice.

Pre-Clinical Exotics/Zoological Practice

Mentorship: Structured one week (45 contact hours) mentorship in an exotics/zoological practice designed to promote clinical skills training in a private practice setting with practitioners who have expressed an interest in training and mentoring veterinary students.

Note

Lecture or combination lecture with lab.

Repeat for Credit

Y

Requisites

Prerequisite: 1st, 2nd, or 3rd Year students in Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 900 - Veterinary Radiology and Diagnostic Imaging

Credits 3

Radiographic, ultrasonographic and nuclear imaging in the clinical setting, with emphasis on making/identifying images of diagnostic quality, interpretation, indications for imaging, and radiation safety.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 901 - Clinical Externship and/or Programmed Study

Credits 0-6

Provides the professional student with the opportunity to

study with specialists not available at Kansas State University or in unique areas of veterinary medical practice or research.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine and the approval of the externship or program of study by the course coordinator.

Typically Offered

Fall, Spring, Summer

VCS 903 - Laboratory Animal Medicine

Credits 2

The study of laboratory animal medicine or comparative medicine to include colony health monitoring, preventive medicine, surgery, investigator support, and regulatory oversight.

Repeat for Credit

N

Requisites

Prerequisite: DMP 759 or requires coordinator approval. Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 904 - Clinical Anesthesia

Credits 3

Practical instruction in the skills and techniques used in the practice of clinical veterinary anesthesia of both large and small animals.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 905 - Zoo, Exotic, Wildlife, and Avian Medicine and Surgery

Credits 3

Study of exotic, wildlife, and zoo animal medicine through participation in the clinical service in the Veterinary Health Center. Problem solving, differential diagnosis, diagnostic procedures, and medical and surgical therapy of non-traditional animals will be emphasized. Annual preventive medicine, medical procedures, and surgical procedures are also routinely performed at the City of Manhattan Sunset Zoo. Occasional medical and surgical procedures are performed in other zoos around the area.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 906 - Ophthalmology

Credits 2

The study of the surgery and medical diagnosis and treatment of ocular disease in animals in the setting of the veterinary medical center. Problem solving, differential diagnosis, diagnostic procedures and medical and surgical therapy will be emphasized using veterinary patients.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 907 - Supplemental Zoo, Exotic, Wildlife and Avian Medicine and Surgery

Credits 3

Additional training in the study of exotic, wildlife, and zoo animal medicine and surgery through participation in the clinical service in the Veterinary Health Center. Problem

solving, differential diagnosis, diagnostic procedures, and medical and surgical therapy of non-traditional animals will be emphasized. Annual preventative medicine, medical procedures, and surgical procedures are also routinely performed at the City of Manhattan Sunset Zoo. Occasional medical and surgical procedures are performed in other zoos around the area.

Repeat for Credit

Y

Requisites

Prerequisite: 4th year standing in the College of Veterinary Medicine

Typically Offered

Fall, Spring, Summer

VCS 909 - Urgent Care

Credits 1

Additional training and skills in triaging and managing patients in need of urgent or emergent care. Examples include wounds, fractures, trauma, cardiovascular shock, respiratory distress, and other urgent/emergent conditions. This will be conducted through lecture/discussion topic rounds and case-based learning.

Repeat for Credit

Y

Requisites

4th Year Standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 910 - Livestock Local Practice

Credits 2

A study of the role of the veterinarian in the practice of clinical medicine in livestock production units. Students will work under faculty supervision in ambulatory and local practice settings.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 912 - Livestock Medicine and Surgery

Credits 2

A study of individual livestock medicine and surgery. Students will work under faculty supervision in an in-house setting.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 913 - Advanced Feedlot Production Management

Credits 2

Students desiring feedlot/stocker production training. Focus on effects of nutrition, preventative medicine, environment, personnel training and other issues on the health of growing/finishing cattle.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in College of Veterinary Medicine.

Typically Offered

Fall, Summer

VCS 915 - Advanced Cow-Calf Production Management

Credits 1

For students desiring in-depth cow-calf production training including management and assessment of production data, nutrition and ration balancing, reproductive strategies, quality assurance and economic and Standardized Performance Analysis of cow-calf enterprises.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Spring, Summer

VCS 917 - Advanced Rural Food Animal Business Management**Credits 1**

An elective course that incorporates economic and food animal practice management skills. Course will focus on business aspects of agricultural industries and skills to manage a food animal practice.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in College of Veterinary Medicine.

Typically Offered

Fall, Spring

VCS 919 - Food Animal Bull Reproduction**Credits 2**

Students will get hands-on experience and become competent performing a complete Breeding Soundness Exam. Other reproductive topics will be covered.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring

VCS 920 - Equine Medicine**Credits 2**

This course will offer general exposure to equine internal medicine and theriogenology. Students will be responsible for diagnoses, treatment and nursing care of out-patients, in-patients, and emergency duties.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 921 - Clinical Equine Theriogenology**Credits 2**

Students will participate in routine procedures that develop skills in handling horses, rectal exams, ultrasonography, semen collection, artificial insemination, uterine therapies and minor surgical procedures.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Spring, Summer

VCS 922 - Equine Surgery**Credits 2**

This course will offer general exposure to equine surgery and theriogenology. Students will be responsible for diagnoses, treatment, and nursing care of out-patients, in-patients, and emergency duties.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 923 - Advanced Equine Studies

Credits 4

Students will have opportunities for routine and advanced clinical skills training and case management. Course discussions and case presentations will be targeted for the equine interested student and will therefore present advanced material; case discussion and rounds materials.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VCS 924 - Equine Field Service

Credits 2

This course will offer general exposure to equine field service and theriogenology. Students will be responsible for diagnoses, treatment, and nursing care of out-patients, in-patients and emergency duties.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 925 - Supplemental Equine

Credits 2-4

An opportunity for students to pursue additional equine studies (medicine, surgery, etc.) in depth and assume substantial responsibility for care of hospitalized cases. Or students will have option to conduct research and present a seminar on a medicine or surgical subspecialty and pursue a special problem.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 930 - Small Animal Internal Medicine

Credits 3

The study of internal medicine in the setting of the Veterinary Health Center. Students will be engaged in the diagnosis and management of complex cases referred to the internal medicine service.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 931 - Clinical Oncology

Credits 2

The approach to diagnosis and treatment of cancer-bearing patients will be emphasized. Skills to master include fine needle aspirates and basic cytology, biopsy techniques (punch, wedge, pinch and tru-cut), bone marrow aspirate and core biopsy procedures and chemotherapy administration. A greater depth of understanding of the biologic behavior and treatment options of commonly seen tumor types (lymphoma, mast cell tumors, hemangiosarcoma, osteosarcoma, etc.) and chemotherapy safety will be emphasized. Medical management of cancer-related problems as well as treatment of therapy-induced side effects will also be covered.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 932 - Small Animal General Medicine

Credits 3

The study of preventative medicine, general practice medicine, and specialty medicine. Students spend three weeks with the Pet Health Center learning the various aspects of outpatient services.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 933 - Dermatology/Medicine

Credits 2

Designed to emphasize dermatology diagnostic work-up and management of dermatologic cases. May include proper techniques for performing procedures such as skin scraping, bacterial and fungal culturing, performing cytology, obtaining skin biopsies, ear clearing and trichography.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 934 - Clinical Small Animal Soft Tissue Surgery

Credits 3

This course is designed to train senior or elective veterinary students in the diagnosis and treatment of small animal soft tissue and general surgical diseases through participation in the Small Animal Soft Tissue Service of the Veterinary Medical Teaching Hospital.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the KSU College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 935 - Comparative Cardiology

Credits 2

Designed to expose students to the cardiovascular system of domestic animals, emphasizing clinical management and understanding of common congenital and acquired cardiac diseases.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 936 - Clinical Small Animal Orthopedic Surgery

Credits 3

Course is designed to train senior or elective veterinary students in diagnosis/treatment of small animal orthopedic surgical diseases through the Orthopedic Service of the Veterinary Medical Teaching Hospital.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 937 - Shelter Medicine

Credits 2

The rotation will be a combination of in-class and laboratory exercises in Manhattan, and hands-on

experiences at regional shelters. Topics include population medicine, infectious disease recognition and control, surgical sterilization, behavioral testing, and legal issues common to shelter settings.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 938 - General Dentistry

Credits 1

Skills and concepts common to general dentistry practice in the feline and canine, pre-operative exams, day-long wet lab to take and interpret digital intraoral radiographs, extract teeth, and perform dental nerve blocks. Also may participate in the evaluation, diagnosis, and treatment of primary care patients.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 939 - Supplemental Clinical Small Animal Soft Tissue Surgery

Credits 3

Additional training in the diagnosis and treatment of small animal soft tissue and general surgical diseases through participation in the Small Animal Soft Tissue Service of the Veterinary Medical Teaching Hospital.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 940 - Small Animal Emergency Rotation

Credits 2

Enhanced training in the management of small animal patients presented to the emergency service. Evaluation, management, and monitoring of small animal patients in the intensive care unit.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 941 - Supplemental Small Animal Internal Medicine

Credits 3

Additional training in the diagnosis, management and treatment of dogs and cats referred to the Internal Medicine service at the Veterinary Health Center.

Note

This course will be scheduled after your core Internal Medicine rotation.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 942 - Advanced Surgical Experience

Credits 2

Designed to increase exposure to soft tissue surgical theories and techniques by providing both hands on surgical experience on cadavers and literature review skills.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring

VCS 943 - Supplemental Clinical Small Animal Orthopedic Surgery**Credits 3**

Additional training in the diagnosis and treatment of small animal orthopedic surgical diseases through participation in the Small Animal Orthopedic Service of the Veterinary Medical Teaching hospital.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the KSU College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 944 - Supplemental Small Animal Emergency**Credits 2-4**

An opportunity to pursue additional training in the management of small animal patients presented to the emergency services. Evaluation, management, and monitoring of small animal patients in the intensive care unit.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 945 - Supplemental Dentistry for Small Animals**Credits 1**

A one week course where students will be instructed through lecture, cadaver labs, and live animal care. Topics covered will include dental evaluation techniques, instrumentation, dental radiography, tooth extraction techniques and regional anesthesia. Objectives of the course will be to provide 4th year students with additional training of basic dentistry knowledge and experience performing oral exams, dental probing, scaling, polishing, radiographs and tooth extractions.

Note

Vet Course

Repeat for Credit

N

Requisites

Prerequisite: 4th Year Standing in the College of Veterinary Medicine and successful completion of CS 771 General Dentistry.

Typically Offered

Fall, Spring

VCS 946 - Shelter Operations Consultation**Credits 1**

This rotation will expose veterinary students to formal shelter consultation procedures. Students will learn how to take a critical look at the health of animal shelters to identify what is being done well and what needs to be improved. Students will also learn how to formulate recommendations in a way that does not overwhelm the administration of the shelters and can easily be implemented in a step-wise fashion.

Repeat for Credit

N

Requisites

Prerequisite: CS 781 Shelter Medicine and 4th Year Standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VCS 947 - Advanced Bovine Palpation**Credits 2**

Provide numerous opportunities for the student to learn how to identify the different structures of the bovine reproductive tract through rectal palpation and transrectal ultrasound, accurately diagnose pregnancy both manually and via ultraonography, and to identify various bovine reproductive abnormalities.

Repeat for Credit

N

Requisites

Prerequisite: VCS 891 Topics in Bovine Palpation Techniques and Reproductive Evaluation and 4th Year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VCS 948 - Supplemental Small Animal General Medicine

Credits 3

Additional training in the study of preventative medicine, general practice medicine, and specialty medicine through participation in the Small Animal General Medicine Service in the Veterinary Health Center.

Repeat for Credit

Y

Requisites

Fourth-year standing in the College of Veterinary Medicine

Typically Offered

Fall, Spring, Summer

VCS 949 - Shelter Medicine - Community Outreach

Credits 1

Designed to give students an opportunity to build practice skills in a community outreach setting. This one week elective course will introduce students to access to care issues and prepare them to deliver veterinary services in socioeconomically diverse settings. The rotation will consist of in-class lessons and discussion followed by outreach clinics. Clinics will primarily focus on wellness exams, preventative medicine and treatment of routine medical conditions.

Repeat for Credit

Y

Requisites

Prerequisite: 4th Year Standing in College of Veterinary Medicine

Typically Offered

Fall, Spring, Summer

VCS 950 - Problems in Medicine or Surgery

Credits 1-9

The course provides for the study of medical or surgical problems. The student, in conference with the major professor, outlines the methodology and procedures, conducts the study, and prepares a detailed report.

Repeat for Credit

Y

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VDMP 800 - Veterinary Career Development

Credits 0

Introduction to career opportunities in veterinary medicine.

Note

A required zero-credit class. No tuition is charged.

Repeat for Credit

N

Requisites

1st year standing in the College of Veterinary Medicine.

Typically Offered

Fall

VDMP 811 - Clinical Pathology I

Credits 2

Principles, application and interpretation of clinical laboratory procedures in clinical cases.

1 credit lecture / 1 credit lab

Repeat for Credit

N

Requisites

Corequisite: Current enrollment in the DVM 1st year curriculum

Typically Offered

Spring

VDMP 814 - Veterinary Bacteriology & Mycology

Credits 3

Morphology, biology and classification of pathogenic bacteria and fungi and their relation to the causes of disease.

Note

Three hours of lecture; moving one semester forward in curriculum and dropping laboratory portion.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 255

Typically Offered

Spring

VDMP 816 - Trade and Agricultural Health

Credits 2

This course considers the multilateral trading system as it relates to food safety, food security, animal health, plant health, and international cooperation. The course content will be of value to students interested in food safety and security, epidemiology, public health, agriculture, food science, security studies, political science, agricultural economics, veterinary medicine, and international relations.

Repeat for Credit

N

Typically Offered

Spring

VDMP 817 - Principles of Veterinary Immunology

Credits 3

Innate and adaptive defense mechanisms in domestic animals. Topics include vaccinology, immunopathology, autoimmunity, immunodeficiency, and immunomodulation.

Repeat for Credit

N

Requisites

Prerequisite: BIOCH 521 and BIOL 255.

Typically Offered

Spring

VDMP 818 - Veterinary Epidemiology

Credits 2

Introduction to the principles and methods of veterinary epidemiology: emphasizing how diseases affect populations (and associated implications for individuals), and application to disease diagnosis, treatment, prevention, and control.

Repeat for Credit

N

Typically Offered

Spring

Crosslisted

MPH 708

VDMP 831 - Veterinary Virology

Credits 3

Morphology, biology, and classification of viruses and their relation to the causes of disease.

Veterinary Virology is a 3 credit lecture course that is designed for veterinary students in the second year of the professional curriculum. The course provides basic and fundamental knowledge on the classification, pathogenesis, and diagnosis of viral pathogens affecting common veterinary species, including ovine, caprine, feline, canine, equine, bovine, avian, and porcine species. In addition, the course is designed to provide adequate knowledge and training for veterinarians in practice on the prevention and

management of these viral diseases.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: VDMP 817.

Typically Offered

Fall

VDMP 832 - General Pathology

Credits 4

Etiology, pathogenesis, lesions, and termination of processes of disease, including inflammation, necrosis, regeneration, oncology, and disturbances of metabolism, circulation, and growth.

Note

Three hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AP 806, AP 816 and AP 810.

Typically Offered

Fall

VDMP 834 - Veterinary Parasitology

Credits 4

Study of the helminth, arthropod, and protozoan parasites of companion and food animals. Emphases are on diagnosis, clinical signs, lesions, treatment, control epidemiology, and public health aspects of parasitic disease.

Repeat for Credit

N

Requisites

Prerequisite: AP 810, AP 804, AP 818 and DMP 817 & DMP 818. Must be 2nd yr student in the Veterinary Curriculum.

Typically Offered

Fall

VDMP 835 - Clinical Pathology II

Credits 3

Principles, application and interpretation of clinical laboratory procedures in clinical cases

Two credits lecture, 1 credit lab.

Repeat for Credit

N

Requisites

Prerequisite: VDMP 811 Clinical Pathology I

Typically Offered

Fall

VDMP 841 - Veterinary Public Health

Credits 2

The linkages between human health and animal health and production. Topics include zoonotic disease, emerging and exotic animal diseases, disaster preparedness, regulatory and community health issues focusing on the role of the veterinarian in all.

Note

Two hours lecture per week.

Repeat for Credit

N

Requisites

Prerequisite: Second-year standing in the College of Veterinary Medicine and VDMP 818.

Typically Offered

Spring

VDMP 857 - Systemic Pathology

Credits 5

Pathology of the organ systems of domestic animals including gross and microscopic study of lesions.

Note

Three hours lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: VDMP 832.

Typically Offered

Spring

VDMP 888 - Globalization, Cooperation, & the Food Trade**Credits 1**

This course will focus on issues and topics including, but not limited to, disputes in the international agricultural and food trade, new concepts such as Food and Agriculture Security, and the food-related challenges faced by wealthy as well as economically poor societies. The course will also address such important topics as the roles played by innovation and investment in the agricultural and food system, the importance of cross-border cooperation in regulation and trade, and the accomplishments of public health and trade policy thought leaders across history.

Repeat for Credit

N

Typically Offered

Fall, Spring

VDMP 891 - DMP Veterinary Medicine Elective**Credits 1-3**

Special topics for veterinary students in the disciplines offered by the department, including: Immunology, Parasitology, Microbiology, Toxicology, Pathology, Epidemiology, Biosafety and Biosecurity, Herd Disease Outbreak Investigation Techniques, Laboratory Animal Science, Laboratory Diagnosis, and Exotoxicology.

Note

Lecture or combination lecture with lab.

Repeat for Credit

Y

Requisites

Prerequisite: 1st, 2nd, or 3rd year students in Veterinary Medicine.

Typically Offered

Fall, Spring

VDMP 902 - Diagnostic Medicine**Credits 2**

Practical experience in necropsy procedures and laboratory findings.

Repeat for Credit

N

Requisites

Prerequisite: Fourth-year standing in the College of Veterinary Medicine.

Typically Offered

Fall, Spring, Summer

VDMP 911 - Dairy Production Medicine**Credits 3**

This course will be conducted using both in-class discussions and field experiences on Kansas dairies. The discussion portion will incorporate about 60% of class time, and field experiences 40%.

Repeat for Credit

N

Requisites

Prerequisite: 4th year standing in the College of Ve

Typically Offered

Other

WOEM 201 - Firearms, Cartridges and Ballistics**Credits 1**

This course will cover the types and functions of firearms used in hunting/shooting sports to include rifles, shotguns and handguns. Basic firearms maintenance will also be covered in this course.

Note

Class held off campus. Minimum 15 contact hours.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Fall

WOEM 202 - Rifle and Handgun Range Design, Construction and Operations

Credits 1

This course covers the design and construction of rifle/handgun shooting ranges based on national standards. The course will also cover operational issues including events planning and implementation.

Note

Class held off campus at Fancy Creek State Shooting Range over a weekend. Minimum 15 contact hours.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Fall

WOEM 203 - Bowhunting Equipment and Skills

Credits 1

This course covers the bowhunting equipment currently used for hunting. Bowhunting skills to include distance estimation, shot placement, etc. are also covered in this course.

Note

Class held off campus at Fancy Creek State Shooting Range over a weekend. Minimum 15 contact hours.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Fall

WOEM 205 - Sporting Clays Range Development and Operations

Credits 1

This course will cover the history and present day rules of sporting clays, the development of sporting clays ranges and their ongoing operations and maintenance.

Note

Class held off campus at Flint Oak Hunting/Shooting Resort, Fall River, Kansas over a weekend. Minimum 15 contact hours.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Spring

WOEM 206 - Trap and Skeet Range Development and Operations

Credits 1

This course will cover the development of "trap" and "skeet" shooting ranges. Operating principles will be covered to include staffing, event planning and implementation.

Note

Class held off campus at Flint Oak Hunting/Shooting Resort, Fall River, Kansas, over a weekend. Minimum 15 contact hours.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Spring

WOEM 250 - Introduction to Wildlife and Outdoor Enterprise Management

Credits 1

This course covers the wildlife and outdoor enterprise management business and profession in North America and worldwide.

Note

One hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

WOEM 350 - Fauna and Flora of the Great Plains

Credits 3

Identification, natural history, and distributions of fauna and flora species occurring in the Great Plains.

Repeat for Credit

N

Requisites

Prerequisites: BIOL 101 or BIOL 198.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

WOEM 400 - Pond and Sportfish Management

Credits 3

Examines principles to manage ponds and recreational sportfish populations in North America including: pond design, construction, and maintenance, sportfish stocking

and harvesting, life history of common species, fish habitat requirements, aquatic vegetation identification and control, and fundamentals of operating aquatic guiding operations.

Note

Two one-hour lectures and one three-hour lab per week. Field trips required.

Repeat for Credit

N

Requisites

Prerequisite: Available only to Wildlife and Outdoor Enterprise Management and Division of Biology majors.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

WOEM 495 - Undergraduate Research in Wildlife and Outdoor Enterprise Management

Credits 0-3

Undergraduate students work with faculty mentors on projects involving various elements of research in WOEM including identifying a problem, designing and conducting experiments, interpreting and communicating the research results. The completed project must be presented at a professional forum, and students are required to write a final project report o

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

WOEM 555 - Big Game Management

Credits 3

Application of practices to manage North American big game species including harvest management, land management, ethics, laws, species' habitat requirements, natural history, daily and seasonal activities of each species, socioeconomic factors, and basics of managing a hunting operation.

Note

Two hours lecture and two hours lab a week. Field trips required.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 101 or BIOL 198

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

WOEM 560 - Upland Game Bird Management**Credits 3**

Application of practices to manage upland game birds in North America to include: harvest management, land management, ethics, laws, species' habitat requirements, daily and seasonal activities of each species, natural history, socioeconomic factors, and basics of managing a hunting operation.

Note

One weekend field trip required. Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 101 or BIOL 198

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Historical Perspectives

WOEM 561 - Waterfowl and Wetlands Management**Credits 3**

This course explores the natural history of waterfowl and wetland birds and habitat management. It includes basic information on the habitat requirements, management techniques, ranges, migration patterns, history, problems, diseases, and identification of the waterfowl resources of North America. Professional principles and practices associated with hunting waterfowl species in North America to include: ethics, laws, species' habitat requirements, and daily and seasonal activities of each species, methods of harvest, dog handling, post-harvest handling and clientele interactions. Includes the following success skills: Communicates Effectively and Maintains Professional Skills and Attitudes.

Note

Two one hour lectures and one two hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 101 or BIOL 198

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

WOEM 562 - Advanced Wildlife Habitat Management**Credits 4**

Theory and practice of managing terrestrial and aquatic vegetation for wildlife production.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 333.

Typically Offered

Fall

WOEM 570 - Internship for Wildlife and Outdoor Enterprise Management**Credits 6-10**

Intensive, paid practical experience with an approved hunting and/or shooting sports and/or fishing business. This is a three to seven month continuous experience.

Repeat for Credit

N

Requisites

Prerequisite: Available only to students majoring in Wildlife & Outdoor Enterprise Management.

Typically Offered

Fall, Spring, Summer

WOEM 590 - Problems in Wildlife and Outdoor Enterprise Management

Credits 0-6

Independent study and/or research project development guided by faculty in Wildlife and Outdoor Management.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

WOEM 595 - Wildlife and Outdoor Enterprise Management Senior Seminar

Credits 1

This course will be used as a capstone course for the Wildlife and Outdoor Enterprise Management curriculum; to include case studies and field experience reviews.

Note

One hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing. Available only to Wildlife and Outdoor Enterprise Management majors.

Typically Offered

Spring

WOEM 596 - Wildlife and Outdoor Enterprise Management Study Abroad

Credits 3

Seminar and travel course designed to prepare students before an international study abroad experience focused on several facets of wildlife and conservation, natural resources, diseases, and land management research. Upon completion of travel, students will analyze, critique, and report their experiences. Course will focus on appropriate oral and written documentation of the experience.

Note

Instructor permission

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

WOEM 620 - Human-Wildlife Conflicts

Credits 3

This course explores the theory and practice of assessing and controlling damage done by wild and feral vertebrate animals, especially mammals and birds. Content covers the philosophical, biological, and practical basis for managing human-wildlife conflicts. It includes basic information on use of traps, toxicants, repellents, exclusion and other wildlife control methods. Emphasis is on protecting agricultural crops and livestock, forest resources, and property.

Repeat for Credit

N

Requisites

Prerequisite: BIOL 198

Typically Offered

Spring-Odd Years

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

WOEM 855 - Resource Selection Methods and Theory

Credits 3

Develops graduate students' knowledge and application of

theory and methods used to evaluate the resource selection and distribution of wildlife and plant species.

Repeat for Credit

N

Typically Offered

Fall-Even Years

Colleges & Departments

College of Agriculture

- Agricultural Economics
- Agronomy
- Animal Sciences and Industry
- Communications and Agricultural Education
- Entomology
- Grain Science and Industry
- Horticulture and Natural Resources
- Plant Pathology

College of Architecture, Planning and Design

- Architecture
- Interior Architecture and Industrial Design
- Landscape Architecture and Regional & Community Planning

College of Arts and Sciences

- Art
- Biochemistry and Molecular Biophysics
- Biology
- Chemistry
- Economics
- English
- Geography and Geospatial Sciences
- Geology
- History
- Mathematics
- Media and Communication
- Modern Languages
- Music, Theatre, and Dance
- Philosophy
- Physics
- Political Science
- Psychological Sciences
- Security Studies
- Social Transformation Studies
- Sociology, Anthropology, and Social Work
- Statistics

College of Business Administration

- Accounting
- Finance
- Management
- Marketing

College of Education

- Curriculum and Instruction
- Dean of Education
- Educational Leadership
- Special Education, Counseling, and Student Affairs

College of Engineering

- Architectural Engineering and Construction Science
- Biological and Agricultural Engineering
- Chemical Engineering
- Civil Engineering
- Computer Science
- Dean of Engineering
- Electrical and Computer Engineering
- Industrial and Manufacturing Systems Engineering
- Mechanical and Nuclear Engineering

College of Health and Human Sciences

- School of Consumer Sciences
- School of Health Sciences
- School of Human Sciences

College of Technology and Aviation (Salina Campus)

- Aviation
- Integrated Studies

College of Veterinary Medicine

- Anatomy and Physiology
- Clinical Sciences
- Diagnostic Medicine/Pathobiology

Graduate School

School of Applied and Interdisciplinary Studies (Olathe Campus)

Mary Lynn and Warren Staley School of Leadership

- Staley School of Leadership

Interdisciplinary Programs

- Biochemistry
- Data Analytics and Insights in Animal Health
- Environmental Design and Planning
- Food Science
- Genetics
- Leadership Communication
- Public Health

College of Agriculture

Ernie Minton, Dean and Director of Kansas State Research and Extension

114 Waters Hall
785-532-7137

Dan Moser, Associate Dean

Vacant, Assistant Dean of Student Affairs

Zelia Wiley, Assistant Dean of Diversity and Inclusion

Deana Core, Assistant Dean of New Student Recruitment

117 Waters Hall
785-532-6151
Fax: 785-532-6897

114 Waters Hall
785-532-6147
Fax: 785-532-6563
<http://www.ag.k-state.edu/>

The Kansas State University College of Agriculture is a dynamic, student-friendly college with a diverse offering of outstanding academic programs integrated with nationally recognized research programs. The College encompasses much more than traditional production agriculture; so, whether your interests range from the biosciences to food systems, or from environmental management to running a multi-million dollar agri-business, the K-State College of Agriculture has a program that will help you meet your objectives and prepare you for a multitude of career opportunities. Our outstanding faculty and staff are committed to student success and helping achieve future career goals.

Doctor of Philosophy

Food Science (PHD)

K-State's interdepartmental Food Science graduate program is part of the Food Science Institute which includes graduate faculty housed in five colleges and eleven departments. The program offers a Ph.D. degree on campus only.

The program provides a variety of research opportunities in the field of food science. Research emphasis includes food chemistry, food microbiology, food safety, sensory analysis, food processing, and food engineering. The program also provides opportunities to work with several food commodities including: cereal; dairy; meats and poultry; fruits and vegetables.

Admission Requirements

Students who hold a master's degree may request transfer of up to 30 hours of that degree toward the 90 credits hours required for the Ph.D.

When should I apply?

Applications should be made at the beginning of the previous semester, and preferably earlier to ensure availability of a major professor. Admission to the program is highly competitive.

- The international student deadline for Fall semester application submission is December 15.
- The international student deadline for Spring semester application submission is June 15.
- The domestic student deadline for Fall semester application submission is February 1.
- The domestic student deadline for Spring semester application submission is September 15.
- The online student deadline for Fall semester application submission is April 15.
- The online student deadline for Spring semester application submission is September 15.

What will I have to submit?

- A completed online application
- Three letters of recommendation
- Official transcripts of all previous college work
- A short statement of objectives
- Graduate Record Examination (GRE) general test scores are required
- Students may submit a current transcript and, if admitted, will receive provisional acceptance pending submission of an official transcript showing completion of a bachelor's degree, or M.S. degree for doctoral applicants.

Are there any special requirements for international students?

International students must also submit the following:

- TOEFL score of at least 577 (paper), 90 (IBT), 7.0 (IELTS) or evidence of a degree from a U.S. university
- Complete financial form and evidence of financial support for entire graduate training
- Ensure sections 1, 2, and 3 are filled out completely on the affidavit. It must include the official bank seal and signature of the bank official. A certificate of deposit or a bank statement is not acceptable to fulfill this requirement.

Course Requirements

Course requirements for the program of study will be evaluated by the student's supervisory committee. However, students are expected to select courses that provide adequate coverage in several food areas, with primary emphasis in one or more areas. The chairman of the Food Science Graduate Program must approve members of the student's supervisory committee and the program of study.

The M.S./Ph.D. program usually includes courses in biochemistry, food chemistry, microbiology, food processing, food engineering, and statistics. For the Ph.D. degree, at least 90 semester hours is required including a dissertation representing at least 30 hours of research credit. In addition, Ph.D. students must complete 24 hours of credit within a 12-month period (residence requirement). Of these 24 hours, at least 12 hours must be in graduate-level courses, and two credits of food science graduate seminar shall be included. There is no foreign language requirement.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Genetics (PHD)

The program is diverse and includes faculty from the following Divisions and Departments:

Agronomy
Animal Science & Industry
Biochemistry & Molecular Biophysics
Biology
Entomology
Horticulture & Natural Resources
Plant Pathology
Statistics

As a result, research opportunities are diverse and include plant and animal breeding, population and evolutionary genetics, quantitative genetics, molecular and developmental genetics, and genomics and bioinformatics. Interdisciplinary interactions are fostered and encouraged based upon a common interest in genetics. Such interactions often bridge basic and applied genetics and merge diverse fields such as agriculture and computer sciences. Thus, the Genetics Graduate Program offers students a truly interdisciplinary and interactive environment in which to pursue their scientific interests.

After meeting the core curriculum requirements, students in the program are encouraged to choose an emphasis, which enables them to specialize in a particular subdiscipline of genetics. At present, the following emphases are available: Arthropod Genetics; Genetics of Plant-Microbe Interactions; Molecular, Cellular, and Developmental Genetics; and Quantitative Genetics. These tracks have been designed so that there is significant overlap in coursework.

Admission Requirements

Course Requirements

Required Courses

Genetics Program students are also required to meet the seminar requirements of the students in their host departments.

A minimum of 90 credits is required, with typical course programs of 25 to 40 credit hours. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate. Courses must include:

- A statistics course (700 level or higher)
- A biochemistry class (700 level or higher)
- A course in population genetics (700 level or higher)
- BIOL 675 - Genetics of Microorganisms Credits: 3
- BIOL 705 - Eukaryotic Genetics Credits: 3

Additional courses required for the PhD degree depend on the emphasis of the degree program:

Molecular, cellular and developmental genetics emphasis

PhD students in the Molecular, Cellular and Developmental Genetics emphasis must take two or more of the following courses:

- BIOCH 907 - Advanced Topics in Insect Biochemistry Credits: 3
- BIOCH 920 - Nucleic Acids Credits: 3
- BIOL 707 - Advanced Cell Biology Credits: 3
- BIOL 860 - Modern Molecular Approaches Credits: 3
- BIOL 868 - Advanced Cellular and Developmental Biology Credits: 3
- BIOL 890 - Advanced Topics in Biology Credits: 1-6
- PLPTH 880 - Plant Molecular Biology Credits: 3

Genetics of plant-microbe interactions emphasis

PhD students in Genetics of Plant-Microbe Interactions emphasis must take two or more of the following courses:

- PLPTH 732 - Introduction to Plant Resistance to Pests Credits: 2
- PLPTH 755 - Plant Resistance to Diseases Credits: 2
- PLPTH 880 - Plant Molecular Biology Credits: 3
- PLPTH 905 - Ecology and Epidemiology of Plant Pathogens Credits: 3
- PLPTH 910 - Molecular Plant-Microbe Interactions Credits: 3
- PLPTH 927 - Fungal Genetics Credits: 3

Arthropod genetics emphasis

PhD students in the Arthropod Genetics emphasis must take two or more of the following courses:

- BIOCH 907 - Advanced Topics in Insect Biochemistry Credits: 3
- ENTOM 799 - Problems in Entomology Credits: 1-18
- ENTOM 830 - Molecular Entomology Credits: 2
- ENTOM 875 - Insect Physiology Credits: 3
- ENTOM 860 - Insect Genetics Credits: 3
- ENTOM 930 - Topics in Entomology Credits: 1-9
- PLPTH 732 - Introduction to Plant Resistance to Pests Credits: 2

Quantitative genetics emphasis

PhD students in the Quantitative Genetics emphasis must take two or more of the following courses:

- BIOL 890 - Top/Ecology of Fungi
- BIOL 890 - Top/Ecology of Genomics
- AGRON 610 - Biotechnology Credits: 3
- AGRON 630 - Crop Improvement and Biotechnology Credits: 3
- AGRON 680 - Plant Genetics Credits: 3
- AGRON 860 - Applied Plant Breeding Credits: 3
- AGRON 970 - Advanced Plant Breeding I Credits: 3
- AGRON 980 - Genomic Analysis for Crop Improvement Credits: 3
- ASI 655 - Behavior of Domestic Animals Credits: 3
- ASI 749 - Advanced Animal Breeding Credits: 3
- BIOL 604 - Biology of the Fungi Credits: 3
- BIOL 870 - Advanced Plant Systematics Credits: 4
- BIOL 875 - Evolutionary Ecology Credits: 3
- BIOL 890 - Advanced Topics in Biology Credits: 1-6
- ENTOM 930 - Topics in Entomology Credits: 1-9
- PLPTH 610 - Biotechnology Credits: 3
- PLPTH 905 - Ecology and Epidemiology of Plant Pathogens Credits: 3
- PLPTH 915 - Advanced Plant Genetics Credits: 3

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Food Science (MS)

K-State's interdepartmental Food Science graduate program offers a Master's degree with a report or thesis option that can be completed on campus or via online education.

[Click here to view the Food Science Institute page.](#)

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Thesis Option Courses

- Minimum of 30 credit hours.

- At least 24 course credit hours.
- At least 18 hours at 700 level including FDSCI 850 Graduate Seminar and 6 credit hours of FDSCI 899.

Report Option Courses

- Minimum of 30 credit hours.
- At least 28 course credit hours.
- At least 18 hours at 700 level including FDSCI 850 Graduate Seminar and 2 credit hours of FDSCI 898.

Coursework Only Option Courses

- Minimum of 34 credit hours.
- 20-22 core credits.
- At least 18 hours at 700 level.

The core courses as outlined below are to ensure that the student possesses the critical graduate level food science knowledge and communication skills required.

Required Courses (20-22 credit hours):

Block A- Required Core Courses (12 credit hours):

- ENGL 758 - Scientific Communication **Credits: 3**
- OR**
- AGCOM 810 - Scientific Communication **Credits: 3**
- FDSCI 600 - Food Microbiology **Credits: 2**
- FDSCI 815 - Advanced Food Chemistry **Credits: 3**
- FDSCI 850 - Food Science Graduate Seminar **Credits: 1**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

Block B- Must take at least 3 out of 5 courses listed below (8-10 credit hours):

- SENS 701 - Sensory Analysis **Credits: 3**
- FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food **Credits: 3**
- FDSCI 695 - Quality Assurance of Food Products **Credits: 3**
- FDSCI 725 - Food Analysis **Credits: 3**
- FDSCI 740 - Research and Development of Food Products **Credits: 3**

Elective Courses (12-14 credit hours)

* May include courses from Block B

Note

It is possible that a student may already have taken one or more of these courses or their equivalent on another degree. Therefore, the graduate advisory committee will determine course substitution as needed.

Total Hours Required for Master's: 30-34

Genetics (MS)

The Genetics graduate program combines a range of genetics or genetics-related courses offered by various departments at Kansas State University with an intensive original research experience that leads to the M.S. degree. The required core of genetics courses cover the genetics of organisms from throughout the Tree of Life (microorganisms, eukaryotes) as well as important quantitative and conceptual genetics topics (population genetics). Elective courses span a wide range of courses that include genetics, and include specialized genetics topics, genomics and bioinformatics courses, and applied genetics courses that are more study-system specific.

For the Genetics M.S. thesis option, the student must take 30 total credits, including at least 22 credits of coursework, and complete and defend a thesis.

Admission Requirements

All students entering the M.S program should have a background in basic Mendelian genetics and molecular genetics and have at minimum a B average in these courses. A preference is given to applicants with some experience in genetics-related research.

Questions about this degree program, the degree requirements and admissions requirements can be directed to genetics@ksu.edu. Emails to this address will be received by the Chair of the Genetics Program, the Graduate Program Director, and the Chair of the Genetics Admissions Committee.

- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**

Course Requirements

Required Courses

A minimum of 15 graduate credit hours, unless approved by supervisory committee.

- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
A 700-level (or higher) course in population genetics
- e.g., PLPTH 820 - Population Genetics **Credits: 3**
A 700-level (or higher) statistics (STAT) course
- e.g., STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
OR
- e.g., STAT 705 - Regression and Analysis of Variance **Credits: 3**
A 500-level (or higher) biochemistry (BIOCH) course
- e.g., BIOCH 521 - General Biochemistry **Credits: 3**
Seminar. Genetics M.S. students are also required to meet the seminar requirements of the students in their host departments, including enrolling in any required seminar courses.
- e.g., PLPTH 870 - Thesis/ Dissertation Proposal Seminar **Credits: 1**

Elective Courses

At least 6 graduate credit hours. Relevant electives courses are offered by Agronomy (AGRON), Animal Science and Industry (ASI), Biochemistry and Molecular Biophysics (BIOCH), Biology (BIOL), Computer Science (CIS), Entomology (ENTOM), Plant Pathology (PLPTH), and Statistics (STAT) or other departments, subject to approval by the supervisory committee. *Below examples are not an exhaustive list of potential electives.*

- e.g., AGRON 860 - Applied Plant Breeding **Credits: 3**
- e.g., ASI 749 - Advanced Animal Breeding **Credits: 3**
- e.g., BIOL 707 - Advanced Cell Biology **Credits: 3**
- e.g., PLPTH 812 - Introduction to Integrative Genome Analysis **Credits: 3**
- e.g., PLPTH 813 - Bioinformatics Applications **Credits: 3**

Thesis Option Courses

6-8 graduate credit hours. Students enroll in M.S. research credits (thesis option) through their host department - a minimum of 6 credits are required, a maximum of 8 credits can be applied to the Genetics M.S. program of study.

- e.g., PLPTH 899 - Research in Plant Pathology for the MS Degree **Credits: 1-18**

Total Hours Required for Master's: 30

Agricultural Economics

Allen M. Featherstone, Head

Allen M. Featherstone, MAB Director of graduate studies

Nathan Hendricks, AGECE Director of graduate studies

342 Waters Hall

785-532-6702

Fax: 785-532-6925

<http://ageconomics.k-state.edu/>

On- Campus Program description

The Department of Agricultural Economics offers on-campus studies leading to a Master of Science (M.S.) or Doctor of Philosophy (Ph.D.) degree. The M.S. and Ph.D. programs stress a strong foundation in economic theory and quantitative analysis, and their application in agricultural and rural issues.

The Agricultural Economics program seeks to achieve excellence in teaching, research, and Extension through the development of the individual student. The core curriculum is deliberately broad in order to build a framework of fundamental information so that new findings and concepts can be assimilated as they arise in the rapidly changing field of agricultural economics. In addition, the programs are designed to provide graduate students a core body of common knowledge through a number of required courses and limited electives.

The core curriculum requires of every student successful completion of courses in microeconomic theory, macroeconomic theory, quantitative methods, production economics and agricultural marketing.

Off- Campus Program description

An off-campus distance Master's of Agribusiness (MAB) degree is offered through the Agricultural Economics Department for working professionals. The MAB program emphasizes the application of economic and management concepts to problems facing

the agribusiness professional. The program is designed for off-campus students who wish to continue full-time employment while pursuing the post-baccalaureate degree. The MAB program emphasizes the study of economic and agribusiness management concepts and their application to food and agricultural business situations. The curriculum focuses on current issues facing agribusiness managers while providing tools for making better decisions in the areas of risk management, logistics, financial management, strategic planning, agricultural resource and trade policy, marketing, human resource management, and institutional changes within agriculture. Two one-week campus sessions are required during both the first and second year of the program. For additional information please see the Agribusiness (MAB) - Distance Program catalog page.

Admission

M.S. and Ph.D. Degrees

Most incoming students have degrees in agricultural economics, economics, business, or some other field in agriculture. Some students have degrees in other social sciences, statistics, computer science, or engineering. The most important consideration for applicants is an interest in continued study and intensive research in some area of agricultural, resource, or environmental economics with the minimum prerequisites for admission to the program. A strong background in economics and quantitative methods are the most important requirements.

Application for admission to the program in a fall semester should be made in the preceding winter or early spring.

Admission to graduate study in agricultural economics requires a minimum grade point average of 3.0 (B average) in the last two years of undergraduate work that earned a bachelors degree. Undergraduate subject matter requirements are as follows:

- a. Two courses in the principles of economics
- b. A course in intermediate microeconomics or production economics and agricultural market structures
- c. A course in intermediate macroeconomic theory
- d. An additional course in agricultural economics or economics
- e. A course in statistics
- f. A course in calculus

Students whose undergraduate academic performance and program of study warrant admission, although some of the subject matter requirements are not met, may be admitted provisionally. Students admitted provisionally will make up these deficiencies by enrolling in appropriate courses for undergraduate credit.

Applicants with grades in the final two years of an undergraduate program that average below 3.0 may, in exceptional cases, be considered for probational admission. Applicants admitted on a probational basis must acquire regular standing by doing satisfactory graduate work during the first semester of graduate study.

Research facilities

The Department of Agricultural Economics is well equipped for research in agricultural economics. Computing equipment and support staff are available to assist researchers. Interdisciplinary research is encouraged and facilitated.

Graduate programs and research in departments such as economics, statistics, mathematics, computer science, industrial engineering, business administration and the production departments in agriculture provide support for research and graduate education in agricultural economics.

Financial support

The Department of Agricultural Economics financially supports graduate study and development in numerous ways. Students enrolled in the M.S. and Ph.D. programs are eligible for graduate research, teaching, and extension assistantships. Departmental faculty regularly secure research and extension grants from federal agencies, state agencies, commodity commissions, research foundations, and private industry. In addition, the Department routinely supports many teaching and research assistantships. The

Department has a successful record of securing USDA National Needs Fellowships and other graduate student fellowships and scholarships. Graduate assistantships are usually on a five-tenths basis. Stipends vary depending upon time worked and level of graduate education. Funded graduate assistants and instructors are regarded as Kansas residents for enrollment fee purposes.

Accelerated

Accelerated Agricultural Economics - Farm Management (BS)/Agricultural Economics (MS)

The accelerated Accelerated Agricultural Economics - Farm Management (BS)/Agricultural Economics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Agricultural Economics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Applicants should follow the K-State Graduate School application process. The application form can be found on the Department's website. Required elements of the application include:

- The K-State graduate application form, which should be completed on-line with the appropriate application fee.
- A brief cover letter and a 2-page statement of objectives for graduate study.
- Three letters of reference.
- Transcript(s) of all undergraduate work completed at the time of application.
- The Graduate Record Examination (GRE) is required for admission to the graduate program.

Applicants without the GRE may be admitted on a probationary basis, but will be required to take the GRE.

Applications are evaluated by the Department's Graduate Committee, which will provide a recommendation to the Director of Graduate Studies about an applicant's suitability for the program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The student must have completed the following three courses and six additional hours of agricultural economics courses. Applicants are encouraged to apply prior to entering their senior year.

- AGECE 500 - Production Economics Credits: 3
- AGECE 501 - Data Analysis and Optimization Credits: 3
- AGECE 505 - Agricultural Market Structures Credits: 3

Course Requirements

Agricultural Economics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- AGECE 712 - Optimization Techniques for Agricultural Economics Credits: 3
- ECON 730 - Applied Econometrics Credits: 3
- ECON 735 - Mathematical Economics Credits: 3
- STAT 610 - Introduction to Mathematical Statistics I Credits: 3

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Agricultural Economics - Specialty (BS)/Agricultural Economics (MS)

The accelerated Agricultural Economics - Specialty (BS)/Agricultural Economics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Agricultural Economics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Applicants should follow the K-State Graduate School application process. The application form can be found on the Department's website. Required elements of the application include:

- The K-State graduate application form, which should be completed on-line with the appropriate application fee.
- A brief cover letter and a 2-page statement of objectives for graduate study.
- Three letters of reference.
- Transcript(s) of all undergraduate work completed at the time of application.
- The Graduate Record Examination (GRE) is required for admission to the graduate program.

Applicants without the GRE may be admitted on a probationary basis, but will be required to take the GRE.

Applications are evaluated by the Department's Graduate Committee, which will provide a recommendation to the Director of Graduate Studies about an applicant's suitability for the program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The student must have completed the following three courses and six additional hours of agricultural economics courses. Applicants are encouraged to apply prior to entering their senior year.

- AGECE 500 - Production Economics **Credits: 3**
- AGECE 501 - Data Analysis and Optimization **Credits: 3**
- AGECE 505 - Agricultural Market Structures **Credits: 3**

Course Requirements

Agricultural Economics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- AGECE 712 - Optimization Techniques for Agricultural Economics **Credits: 3**
- ECON 730 - Applied Econometrics **Credits: 3**
- ECON 735 - Mathematical Economics **Credits: 3**
- STAT 610 - Introduction to Mathematical Statistics I **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Agricultural Economics (PHD)

The Ph. D. program is offered through the Department of Agricultural Economics graduate program and is operated in cooperation with the Department of Economics. The program prepares students to work in academia, the public sector, or industry.

Admission Requirements

The Ph. D. requires a total of 90 credit hours of graduate-level work beyond the bachelor's degree, composed of 60 hours of coursework and 30 hours of research credits for the dissertation. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate. The credit received for writing an M. A. or M. S. thesis or report may be used to meet the 60 hour coursework requirement for the Ph. D. The number of hours accepted from (optional) the master's degree depends on the relevance of the coursework to the doctoral degree.

Students must also pass qualifying exams and the preliminary exam as described in the department's graduate handbook. A student is advanced to candidacy after passing the preliminary exam.

Course Requirements

Economic Theory: 12 Credits

- ECON 735 - Mathematical Economics **Credits: 3**
- ECON 805 - Macroeconomic Theory I **Credits: 3**
- ECON 940 - Advanced Microeconomic Theory I **Credits: 3**
- ECON 945 - Advanced Microeconomic Theory II **Credits: 3**

Quantitative Methods: 9 credit hours

- ECON 830 - Econometrics I **Credits: 3**
- ECON 930 - Econometrics II **Credits: 3**
- AGECE 936 - Quantitative Topics in Agricultural Economics **Credits: 3**

Agricultural Economics Core Courses: 9 credit hours

- AGECE 901 - Research Methods in Economics **Credits: 3**
- AGECE 905 - Agricultural Demand and Commodity Marketing **Credits: 3**
- AGECE 923 - Economics of Agricultural Production **Credits: 3**

Electives: 3 credit hours

AGECE or ECON (900 level or higher)

Specialty Area: 6 credit hours

Courses for the specialty area must be approved by the student's major professor. No course can be used to meet both the specialty and another program requirement. Any AGECE or ECON courses used for the specialty area must be 800 level or higher.

Any courses from other programs used for the specialty area must be 700 level or higher. Any variances to these specialty area requirements must be approved by the major professor and the graduate committee.

Dissertation: 30 credit hours

Note

If a student does not have a master's degree, then an additional 21 credit hours of general electives are needed to meet the required 60 course hours, including the following M. S. level courses: AGECE 712, AGECE 805, and AGECE 823.

The following courses developed for the Masters of Agribusiness are not allowed on a student's program of study: AGECE 700, AGECE 701, AGECE 710, AGECE 713, AGECE 720, AGECE 730, AGECE 740, AGECE 760, AGECE 761, AGECE 770, and AGECE 890.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Dual Degree

Dual Degree: Master of Agribusiness and Professional Master of Business Administration

The Dual Professional Master of Business Administration/Master of Agribusiness is an academic program that allows for the concurrent study of graduate business and graduate agribusiness and leads to both the MAB degree and the PMBA degree. The program is designed for students seeking business problem-solving skills, organizational communication and change management knowledge, and development of strategic analysis competencies utilizing technological tools to increase workplace efficiencies in diverse setting spanning business, food, animal health, and agribusiness industries. The PMBA portion is designed to advance the knowledge and decision making skills necessary for today's business environment. The MAB portion is designed to provide agribusiness professionals strategies for making informed decisions based upon a thorough understanding of current issues. Students graduating from the dual degree program will receive two degrees, a Master of Business Administration and a Master of Agribusiness. The program requires the completion of 63 credit hours: 27 credit hours in the PMBA program and 36 credit hours in the MAB program. The degrees are conferred simultaneously when all requirements for the dual degree program have been met. The assessment of the dual degree program is conducted in each program independently as specified in respective programs.

Application/ Admission

Students are required to fulfill the admittance requirements of both degrees to be admitted into this dual degree program. The person seeking admission to the MAB/PMBA Dual Degree Program must:

- a. Complete an application on CollegeNet (<https://www.applyweb.com/kstateg>) using Dual MAB/PMBA program link. The link will be accessible from both the College of Business Administration and Department of Agricultural Economics portals. (Students desiring to apply only to the PMBA or MAB should select the specific program not the dual degree option in CollegeNet.) Application materials include: official transcript of all completed academic work; GRE or GMAT

scores and TOEFL scores, if applicable; statement of objectives; resume; and an Affidavit of Financial Support, if applicable.

b. The graduate admission committee of each program will evaluate the application separately and collectively make the final decision using the same criteria as specified in their respective programs. The applicant must meet admissions requirements of both programs.

c. A student who is initially admitted to either the PMBA or MAB and who later decides to pursue the dual degree must apply for a change of degree to the MAB/PMBA dual degree prior to being awarded the first degree.

d. Students admitted to the MAB/PMBA joint degree program who later decide they only want to complete one of the degrees must:

- 1) Submit a written notification to both programs.
- 2) Must have their primary program plan changed to reflect the degree to be completed.
- 3) Submit a new program of study for the degree program they will complete to the Graduate School for an approval. Students must complete the requirements for the respective program to receive the PMBA or MAB degree.

Degree Requirements

PMBA Program: 24 credit hours

Business Core 18 credit hours

- ACCTG 710 - Foundations of Accounting **Credits: 3**
- MANGT 710 - Operations and Supply Chain Management **Credits: 3**
- MANGT 720 - Managing Organizational Behavior **Credits: 3**
- MIS 830 - Business Intelligence and Storytelling in Cloud Environments **Credits: 3**
- MKTG 705 - Marketing Concepts and Research **Credits: 3**
- MANGT 860 - Managing the Triple Bottom Line Business **Credits: 3**

Integrated Core 6 credit hours

- MANGT 880 - Strategic Management **Credits: 3**
- GENBA 875 - MBA International Business Experience **Credits: 1-3**

MAB Program: 36 credit hours

Required Courses 27 credit hours

- AGECE 701 - Introduction to Computer Decision Tools for Agribusiness **Credits: 1**
- AGECE 713 - Agribusiness Financial Management **Credits: 3**
- AGECE 730 - Applied Agribusiness Logistics **Credits: 3**
- AGECE 700 - Applied Agribusiness Economics **Credits: 3**
- AGECE 761 - Optimization Techniques for Agribusiness **Credits: 2**
- AGECE 720 - Agribusiness Risk Management **Credits: 3**
- AGECE 760 - Applied Econometric Analysis **Credits: 3**

- AGECE 770 - International Agribusiness and Policy Analysis Credits: 3
- AGECE 890 - Advanced Food and Agribusiness Management Credits: 3
- AGECE 740 - Seminar in Agricultural Economics Analysis Credits: 0-18

Additional Courses – Thesis Option 6 credit hours

- AGECE 899 - Agricultural Economics Master's Research Credits: 1-18

Electives 3 credit hours

Elective (3 credit hours) from Agricultural Economics or Business

Graduate Certificate

Animal Health Management Graduate Certificate

Contact: Dr. Allen Featherstone
E-mail: afeather@ksu.edu

Contact: Mr. Paul Casady
E-mail: pscasady@ksu.edu

The increasing complexity of the global animal health industry has created a need for additional training for employees of this industry in the management of organizations in this industry. Critical issues include the redefinition of animal health as a whole and the complexities that have arisen with pharmaceutical impact in food supplies; the breadth of species included in animal health (food and companion); veterinary epidemics and the one health concept; consolidation of companies; increasing regulation; "downstream customer" influence and knowledge; workforce diversification; and the competition for resources in human/animal markets.

The aim of this certificate program is to provide a series of courses and experiences that will equip employees in animal health industries with economic and animal agriculture specific management tools to enable them to lead and manage organizations in the animal health sector. The certificate will be open to individuals meeting the admissions criteria delineated in Section E and is not limited to Master of Agribusiness students.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Agribusiness at Kansas State University.

Course Requirements

Required Courses

- AGECE 700 - Applied Agribusiness Economics Credits: 3
- AGECE 713 - Agribusiness Financial Management Credits: 3
- AGECE 735 - Sales and Marketing in the Global Animal Health Industry Credits: 3
- AGECE 780 - Economics of the Global Animal Health Industry Credits: 3
- AGECE 890 - Advanced Food and Agribusiness Management Credits: 3
- AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
- MANGT 720 - Managing Organizational Behavior Credits: 3

Total Hours Required for Graduate Certificate: 20

Master of Science

Agricultural Economics (MS)

Offered through the Department of Agricultural Economics, the M.S. in Agricultural Economics can be earned in either a thesis or no-thesis option.

Course Requirements

The thesis option includes a minimum of 30 semester hours of graduate credit including 24 hours of course work and a Master's thesis for which 6 semester credit hours are given. The program is designed to prepare students for careers in research, analysis, or to continue towards a Ph.D. program. The course requirements are:

Required Courses

- ECON 720 - Microeconomic Theory **Credits: 3**

Elective Courses

- ECON 805 - Macroeconomic Theory I **Credits: 3**
- AGECE 805 - Agricultural Marketing **Credits: 3**
- AGECE 810 - Price, Income and Trade Policies in Agriculture **Credits: 3**
- AGECE 823 - Production Economics II **Credits: 3**
- AGECE 825 - Natural Resource Policy **Credits: 3**
- AGECE 840 - International Markets and Agricultural Trade **Credits: 3**
- AGECE 880 - Agribusiness Industry Structures **Credits: 3**

Quantitative Methods: 3 credit hours

- ECON 730 - Applied Econometrics **Credits: 3**

Electives

For thesis option: 9 credit hours; for coursework only option: 21 credit hours

- AGECE Elective (700 level or higher) **Credits: 3** (Thesis option) or 12 (Coursework only option)
- General Elective (700 level or higher) **Credits: 3**

OR

- AGECE 713 - Agribusiness Financial Management **Credits: 3**
OR
- AGECE 720 - Agribusiness Risk Management **Credits: 3**
OR
- AGECE 730 - Applied Agribusiness Logistics **Credits: 3**

- General Elective (700 level or higher) **Credits: 3**

Courses for general electives must be approved by the student's major professor.

Thesis Option Course: 6 credit hours

- AGECE 899 - Agricultural Economics Master's Research **Credits: 1-18**

Coursework Only Option

The student is required to demonstrate evidence of scholarly effort by completing a creative component consisting of a written paper and an oral defense.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Total Hours Required for Master's: 30-36

Thesis Option: 30 credit hours

Non-thesis Course work only option: 36 credit hours

Note

The following courses developed for the Masters of Agribusiness program are not allowed on a student's program of study: AGECE 700, AGECE 701, AGECE 710 , AGECE 740 , AGECE 760, AGECE 761, AGECE 770, and AGECE 890.

Agricultural Economics: Concentration in Agribusiness (MS)

The on-campus Master of Science in Agricultural Economics with concentration in Agribusiness, offered by the Department of Agricultural Economics, is designed for students aiming for the next level in the agribusiness sector or academia.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

- AGECE 880 - Agribusiness Industry Structures **Credits: 3**
- ECON 720 - Microeconomic Theory **Credits: 3**
- FINAN 715 - Foundations of Finance **Credits: 3**

Elective Courses

Select one course from:

- AGECE 805 - Agricultural Marketing Credits: 3
- AGECE 810 - Price, Income and Trade Policies in Agriculture Credits: 3
- AGECE 823 - Production Economics II Credits: 3
- AGECE 825 - Natural Resource Policy Credits: 3
- AGECE 840 - International Markets and Agricultural Trade Credits: 3
- ECON 805 - Macroeconomic Theory I Credits: 3

Quantitative Methods: 6 credit hours

- AGECE 712 - Optimization Techniques for Agricultural Economics Credits: 3
- ECON 730 - Applied Econometrics Credits: 3

Ag Economics, Finance, Marketing, Management: 6 credit hours

- FINAN 820 - Advanced International Financial Management Credits: 3
 - FINAN 830 - Financial Market Theory Credits: 3
 - MANGT 710 - Operations and Supply Chain Management Credits: 3
 - MANGT 720 - Managing Organizational Behavior Credits: 3
 - MANGT 825 - Advanced Business Law Credits: 3
 - MANGT 840 - Advanced Entrepreneurship Credits: 3
 - MKTG 705 - Marketing Concepts and Research Credits: 3
 - MKTG 842 - Advanced Marketing Research Credits: 3
 - MKTG 844 - Advanced International Marketing Credits: 3
 - MKTG 860 - Advanced International Business Credits: 3
- AGECE 700 or higher level course not used for other requirements.

Thesis Option Course: 6 credit hours

- AGECE 899 - Agricultural Economics Master's Research Credits: 1-18

Note

The following courses developed for the Masters of Agribusiness are not allowed on a student's program of study: AGECE 700, AGECE 701, AGECE 710 , AGECE 740 , AGECE 760, AGECE 761, AGECE 770, and AGECE 890.

Total Hours Required for Master's: 30

Other Degrees

Master of Agribusiness (MAB)

An off-campus distance Master's of Agribusiness (MAB) degree is offered through the Agricultural Economics Department for working professionals. The MAB program emphasizes the application of economic and management concepts to problems facing the agribusiness professional. The Master in Agribusiness program is designed for off-campus students who wish to continue

full-time employment while pursuing the post-baccalaureate degree. The MAB program emphasizes the study of economic and agribusiness management concepts and their application to food and agricultural business situations. The curriculum focuses on current issues facing agribusiness managers while providing tools for making better decisions in the areas of risk management, logistics, financial management, strategic planning, agricultural resource, and trade policy, marketing, human resource management, and institutional changes within agriculture. Two one-week campus sessions are required during both the first and second year of the program.

For additional information and application materials please contact:

Allen Featherstone
Master's of Agribusiness Program Director
Department of Agricultural Economics
Kansas State University
342 Waters Hall
Manhattan, KS 66506-4011
785-532-4441
Fax: 785-532-6925
E-mail: afeather@ksu.edu
Home Page: <http://www.mab.ksu.edu/>

Admission Requirements

Course Requirements

The Master in Agribusiness degree requires the completion of 42 credit hours. The curriculum consists of a set of integrated management and economics topics, including 27 hours of agribusiness courses, 9 hours of business courses, and 6 hours of thesis. Students enter the program as a cohort and pace through the program together over a 30 month period.

Course requirements for the Master in Agribusiness are:

Agribusiness courses (27 credit hours)

- AGECE 700 - Applied Agribusiness Economics **Credits: 3**
- AGECE 701 - Introduction to Computer Decision Tools for Agribusiness **Credits: 1**
- AGECE 713 - Agribusiness Financial Management **Credits: 3**
- AGECE 720 - Agribusiness Risk Management **Credits: 3**
- AGECE 730 - Applied Agribusiness Logistics **Credits: 3**
- AGECE 740 - Seminar in Agricultural Economics Analysis **Credits: 0-18**
- AGECE 760 - Applied Econometric Analysis **Credits: 3**
- AGECE 761 - Optimization Techniques for Agribusiness **Credits: 2**
- AGECE 770 - International Agribusiness and Policy Analysis **Credits: 3**
- AGECE 890 - Advanced Food and Agribusiness Management **Credits: 3**

Business courses (9 credit hours)

- MANGT 720 - Managing Organizational Behavior **Credits: 3**
- MKTG 705 - Marketing Concepts and Research **Credits: 3**
Business Elective of the student's choice, selection must be approved by MAB Program Director (3)

Thesis hours (6 credit hours)

- AGECE 899 - Agricultural Economics Master's Research Credits: 1-18

Total Hours Required for Master's: 42

Note

The thesis involves the application of concepts and quantitative tools learned in course work to a firm-level agribusiness problem. The candidate is expected to take a final oral examination for the purpose of defending the thesis.

Agronomy

Rajiv Khosla, Head

Nathan O. Nelson, Director of graduate studies

2004 Throckmorton Hall

785-532-6101

Fax: 785-532-6094

agronomy@k-state.edu

<http://www.agronomy.ksu.edu>

Program objectives

The Department of Agronomy offers courses of study leading to degrees of master of science and doctor of philosophy in many diverse crop, soil, and range science specializations. These study areas include: agricultural climatology, crop-climate modeling, crop ecology, crop physiology, crop production, cytogenetics, environmental chemistry, environmental physics, forage management, plant breeding, plant genetics, range science, soil biochemistry, soil fertility, soil genesis and classification, soil microbiology, soil-plant-water relations, soil physics/biophysics, soil/water chemistry, soil/water conservation, soil/water management, and weed science.

The department consists of 55 graduate faculty members, about 65 graduate students, and several postdoctoral fellows and visiting scientists. The faculty are dedicated to providing students individualized training needed to address the many challenges facing agriculture.

Graduate programs are designed to accommodate the interest and objectives of the student. These programs require students to conduct original research. Students receive thorough training in investigative techniques by using modern facilities and through experienced guidance by faculty. Critical parts of the process involve the preparation of research findings in the form of a thesis or dissertation and their publication in a scientific journal. Students are encouraged to develop independent thought as well as a broad spectrum of knowledge. Flexibility in graduate training is possible because of the large number of faculty and the diversity of their research interests.

Facilities and equipment

The Department of Agronomy laboratories are well equipped with modern instrumentation for research in the many areas of specialization. Controlled environment chambers and greenhouses are available. Excellent dryland and irrigated field research facilities are available at the agronomy farms near Manhattan, at seven agronomy experiment fields, and at four Agricultural Research Centers located throughout the state. A large inventory of field, plot and laboratory equipment enable graduate students to plan and implement complex research programs which address challenges facing agriculture. Vehicle support provides student

access to the diverse cropping and grazing systems present in Kansas. The Rannells Range Research Unit and the Konza Prairie enable native range investigations to be conducted at Manhattan. Special facilities which can be utilized by graduate students include the USDA Wind Erosion Lab, USDA Grain Marketing Lab, Agronomy Soil Testing Lab, and other service labs. Reference materials from the University Library are complemented by the Agronomy Graduate Library, housed within the department. Graduate students benefit from excellent computer and networking facilities through the mainframe computer center. State-of-the-art personal computers are available for use by all students.

Admission

Incoming students commonly have a bachelor or master of science degree in agriculture, agronomy, crop science, soil science, or a related physical or life science. The most important considerations for applicants are an interest in continued study and intensive research in a specific area of agronomy along with prerequisites for admission to the program. Preparation in the biological, physical, and mathematical sciences is considered fundamental for all areas of graduate study in agronomy. Course requirements for each student are determined by a supervisory committee with consideration given to the student's qualifications and professional interests and goals.

Stipends

Research and teaching assistantships and research fellowships are available to graduate students in the Department of Agronomy. A majority of the students enrolled in Agronomy are supported during their graduate study. Nearly 50 percent of graduate students are appointed to a half-time graduate research assistantship. Stipends are competitive with leading universities. Graduate teaching and research assistants are assessed the in-state rate for tuition and fees. Graduate teaching assistants receive a substantial reduction of in-state tuition. An excellent graduate scholarship program provides additional assistance to several graduate students each year.

Application procedure

Applications are accepted at any time. However, students desiring admission and consideration for an assistantship for the fall semester are urged to submit their applications early, preferably before February 1, to enhance their chances for admission and financial support. The completed application form, statement of objectives, transcripts, and letters of recommendation are used to determine qualifications for graduate work. GRE scores are not required.

Doctor of Philosophy

Agronomy (PHD)

Students in Ph.D. Agronomy programs conduct original research and receive thorough training in investigative techniques by use of modern facilities with guidance by experienced faculty. The large number of faculty and the diversity of their research interests provides flexibility in graduate training. Course requirements for each student are determined by the major professor and the supervising committee with consideration given to the student's qualifications and professional interests and goals. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Admission Requirements

**Admission Requirements field from Curriculog proposal*

Specify in the requirements one of the following:

- A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.
- Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Application Requirements (Optional)

Graduation Requirements

**Graduation Requirements field as outlined in the Curriculog proposal – To be used only when additional requirements, beyond those specified in the Graduate Handbook's University Requirements, must be submitted for further review and approval.*

Dissertation Requirements

**Special Requirements field from Curriculog proposal*

Course Requirements

*Course Requirements – The Curriculum Schema section in the Curriculog proposal will automatically populate based on the selected template.

Required Courses

Concentration Courses

Research/Dissertation

Program Total Credits: 60

Master's degree Transfer Credits: 30

*Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree

Total Hours Required for Doctorate: 90

Graduate Certificate

Grassland Management Graduate Certificate

Contact: Walter H. Fick
E-mail: whfick@ksu.edu

This certificate is offered through the Agronomy graduate program and is available through distance education. The purpose of this program is to provide current and future grassland professionals (i.e., managers, advisors, and conservationists) and others with distance education opportunities that lead to a graduate certificate in grassland management. Grasslands (including

rangelands, pasturelands, and haylands) are the principle land resource type in the Great Plains, comprising more than 50% of the land surface area. The major use of the regions' grasslands is livestock grazing. The beef cattle industry is prominent in the Great Plains, making up more than 50% of the US beef cow inventory. Grasslands in the region are also critically important for providing wildlife habitat, recreation, high quality water and air, and other environmental services. Grasslands represent a fundamental resource of the region that determines the environmental and economic future of the Great Plains states.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

Select 12 credit hours from the following:

- AGRON 660 - Grassland Monitoring and Assessment **Credits: 2**
- AGRON 662 - Rangeland Watershed Management **Credits: 3**
- ATM 661 - Watershed Assessment and Management **Credits: 3**
- AGRON 682 - Grassland Fire Ecology **Credits: 3**
- AGRON 781 - Ecology of Invasive Species **Credits: 3**
- AGRON 821 - Principles of Forage Quality **Credits: 3**
- AGRON 832 - Grassland Plant Identification **Credits: 2**
- AGRON 881 - Grazing Ecology and Management **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Master of Science

Agronomy (MS)

Students in M.S. Agronomy programs conduct original research and receive thorough training in investigative techniques by use of modern facilities with guidance by experienced faculty. The large number of faculty and the diversity of their research interests provides flexibility in graduate training. Course requirements for each student are determined by the major professor and the supervising committee with consideration given to the student's qualifications and professional interests and goals.

Robert Berry
Graduate Program Contact
rwb7@k-state.edu
Phone: 785-532-2257

Course Requirements

Required Courses

Total Hours Required for Master's: XX

Animal Sciences and Industry

Michael L. Day, Head

Evan Titgemeyer, Director of graduate studies

232 Weber Hall

785-532-6533

Fax: 785-532-2461

asi@ksu.edu

<http://www.asi.k-state.edu/>

Accelerated

Accelerated Animal Sciences and Industry - Management/Industry (BS)/Master of Business Administration (MBA)

The accelerated Animal Sciences and Industry - Management/Industry (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ASI 601 - Endocrinology and Lactation **Credits: 3**
- ASI 640 - Poultry Products Technology **Credits: 3**
- ASI 650 - Identification and Data Management of Food Animals **Credits: 2**
- ASI 680 - Ruminant Nutrition **Credits: 1**

- **STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Animal Sciences and Industry - Pre-Veterinary/Science (BS)/Master of Business Administration (MBA)

The accelerated Animal Sciences and Industry - Pre-Veterinary/Science (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate electives.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- **ASI 601 - Endocrinology and Lactation Credits: 3**
- **ASI 640 - Poultry Products Technology Credits: 3**
- **ASI 650 - Identification and Data Management of Food Animals Credits: 2**
- **ASI 680 - Ruminant Nutrition Credits: 1**
- **STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Animal Sciences (PHD)

The Department of Animal Sciences and Industry is a comprehensive unit supported by about 50 faculty devoted to research, teaching, and extension activities related to domestic farm animal species. Currently, the department has approximately 1,000 undergraduate students advised in the department and about 60 graduate students pursuing either M.S. or Ph.D. degrees in the Animal Science graduate program.

For graduate training, the department has animal research and teaching units located conveniently to the main campus. Those units include beef (grazing and feedlot), dairy, swine, sheep, poultry, and horse teaching and research units. In addition, both Call Hall and Weber Hall contain laboratories equipped to conduct most analytical techniques required for research.

Graduate training in the Department of Animal Sciences and Industry is organized within six functional discipline groups including animal breeding and genetics, meat science, monogastric nutrition, physiology, ruminant nutrition, and food science. The food science program represents a large interdisciplinary degree program and is detailed in a separate area in the catalog.

Admission Requirements

Application for admission to graduate school should begin as early as possible in the semester before the proposed admission date (i.e., for fall semester, begin application process early in the preceding spring semester). All applicants must submit a completed application form, three letters of recommendation, and official transcripts of all previous college work. In addition, the applicant should write a short statement of objectives to include the discipline area (and animal species if appropriate) in which the student desires to study. The statement of objectives should specify faculty with whom he/she desires to work as a graduate student. This information is important in placing prospective graduate students with major professors whose area of research coincides with their areas of interest.

Doctoral programs in Animal Science are all research based, so each student must have a faculty advisor who guides the research program. Typically, the most limiting step for gaining admission to graduate school is finding a faculty member to serve as advisor. Prospective graduate students are encouraged to visit directly with faculty working in their area of research interest to learn more about their research programs and determine if they are planning to accept additional students into their program. International applicants must meet English proficiency requirements as described in the Graduate School handbook (<https://www.k-state.edu/grad/student-success/graduate-handbook/chapter1.html>).

The Graduate Record Examination is not required for admission, but it may be helpful in the evaluation process.

Upon receipt of all required application documentation, the applicant's file will be reviewed by the departmental Graduate Committee which includes graduate faculty representing each of the five discipline areas. If the student is deemed acceptable for admission, a graduate faculty member willing to serve as major professor must be identified before the student's credentials are forwarded to the graduate school.

Limited numbers of Graduate Research Assistantships and Graduate Teaching Assistantships are available on a competitive basis. Individual faculty members make the key decisions about providing assistantships. For students awarded a Graduate

Research Assistantship, student tuition and fees are assessed at in-state resident rates. For students awarded a Graduate Teaching Assistantship, tuition is waived.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Special Requirements

Graduate students in Animal Science are required to assist in teaching a course during each Spring and Fall semester, although waivers can be granted, notably during the student's final semester. After successfully completing the preliminary exam, students must be enrolled at Kansas State University each semester, excluding summer semester, until degree requirements are met.

Course Requirements

Programs of study must follow the policies of the Graduate School (<https://www.k-state.edu/grad/student-success/graduate-handbook/chapter3.html#Program%20of%20Study>). Students must complete 90 credit hours, which must include 3 hours of ASI 990 (Seminar in Animal Sciences Research). Students who have previously completed a research-based M.S. degree must complete at least 25 hours of ASI 999 (Doctoral Research in Animal Sciences and Industry), whereas students who have not completed a M.S. degree must complete at least 32 hours of ASI 999.

Required Courses

Students must complete 90 credit hours, which must include 3 hours of ASI 990 (Seminar in Animal Sciences Research). Students who have previously completed a research-based M.S. degree must complete at least 25 hours of ASI 999 (Doctoral Research in Animal Sciences and Industry), whereas students who have not completed a M.S. degree must complete at least 32 hours of ASI 999.

- ASI 990 - Seminar in Animal Sciences Research **Credits: 1**
- ASI 999 - Doctoral Research in Animal Sciences and Industry **Credits: 1-18**

Concentration Courses

Animal breeding and genetics

Graduate programs are designed specifically for each student to acquire training in genetics, animal breeding, and statistics. Additional courses will be selected from the fields of biological and physical sciences. A typical program of study will include some of the following graduate level courses: statistical and population genetics; animal breeding; statistics and experimental design; genomics; and molecular biology. Research is conducted using field data from cooperating ranches, breed association, and universities. Facilities are available for adequate analysis of most data sets, including access to software used in genetic evaluation as well as access to high performance computing resources for analysis of high-throughput genomic and sequencing datasets.

Meat science

The meat science program is comprehensive and prepares students for fundamental and applied research, product and process development, and technical service in industry, academic, regulatory, and international positions. Faculty conduct research in tissue growth and development; ante- and post-mortem factors and processes affecting meat quality and composition; myofibrillar, collagen, and pigment chemistry; packaging; lighting; byproduct value enhancement; processed meats; quality assurance; and safety of meat and meat products. Facilities include a fully equipped meat laboratory that permits experimental

and industry-like fresh and processed meat processing; research laboratories for physical and chemical analyses; and thermal processing, display, and sensory facilities for instrumental and sensory panel evaluation of meat products. Graduate students are actively involved in teaching, research, and extension activities as part of their training.

Monogastric nutrition

The monogastric nutrition teams offer comprehensive training that weaves a basic understanding of nutrition into an applied research program. Areas of specialized emphasis include comprehensive programs in swine, equine, and poultry nutrition. The K-State swine nutrition program is a national leader in conducting applied field research in modern commercial swine facilities. This allows graduate students to be exposed to the swine business while conducting timely and industry-leading research. Areas of research include amino acid and energy nutrition, utilization of alternative feed ingredients, influences of technological advances on nutritional requirements, and effects of feed processing technologies on nutrient utilization.

The Equine Nutrition program at K-State has one of only two university-owned herds of cecally cannulated horses. This allows graduate students a research program focused on nutrient digestion and absorption, the equine hindgut's microbiome, and the cecal environment.

The poultry program focuses not only on broiler and laying hen nutrition, but gamebird nutrition as well. Research areas include feed processing and nutrient requirements of poultry.

Graduate students are offered an array of course work to develop areas of expertise. Common areas of training include basic nutrition, biochemistry, statistics, and grain science. Seminars and discussion groups are an integral part of the graduate program.

Physiology

Animal Sciences and Industry (ASI) graduate students pursuing a Ph.D. degree in physiology will be exposed to a comprehensive, interdisciplinary program that may consist of multiple species including cattle, pigs, horses, sheep, goats, and poultry. Physiology course work and seminars span across many areas within ASI and across related departments including statistics, biochemistry, biology, psychology, and anatomy and physiology. Graduate students have the opportunity to develop teaching skill sets by contributing to our extensive ASI undergraduate program, and many students assist with our state and regional extension efforts. Research expertise can be gained in multiple areas across physiology, including basic research in molecular, cellular, and tissue function; translational research in endocrinology, gamete function, embryology, stress physiology, immunology, and neurobehavioral mechanisms; and applied research in reproduction, health, behavior, and animal welfare. Graduate training in physiology prepares students for various careers in animal and biotechnological industries, research, teaching, technical services, consulting, youth and adult extension, and related fields of animal physiology.

Ruminant nutrition

Scientists within the ruminant nutrition program maintain the dual goals of conducting research that will advance the understanding of fundamental nutritional phenomena and also provide insight into practical aspects of the nutritional management of ruminant livestock. Individual research programs range from basic to very applied. Students in the program are provided with a strong foundation in ruminal and post-ruminal digestion, metabolism, and fundamental experimental procedures necessary for conducting ruminant nutrition research. Areas of research emphasis within the ruminant nutrition group include dairy cattle nutrition, beef feedlot nutrition, grazing livestock nutrition, measurement of greenhouse gas emissions, and stocker cattle nutrition.

Supporting course work is frequently pursued in the areas of biochemistry, grain science, microbiology, physiology, and statistics.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Food Safety and Defense Graduate Certificate

Contact: J. Scott Smith – Graduate Program Chair

E-mail: jsschem@ksu.edu

Contact: Nicole Marple – Program Assistant

E-mail: nmarple@ksu.edu

This certificate is offered through the Food Science and Industry graduate program. By providing a distance education Food Safety and Defense graduate certificate program we will serve the needs of industry and agencies that must protect the human food supply from accidental or deliberate contamination with pathogenic microbes and/or toxicants. In an era of terrorism and global food systems, effective control of foodborne hazards requires advanced education. There is an urgent need for online education for food industry personnel who, while working fulltime, would like to pursue more in-depth specialized training in food safety and security that is pertinent to their job. Many food-related industry and agency professionals have a B.S. in some aspect of food and agricultural sciences or related area along with good technical background and work experience but they may not be able to pursue a full graduate degree, due to expense, time constraints and/or interests. These needs warrant the development of a program to prepare graduate students and food-related professionals to effectively deal with food safety and biosecurity issues.

Upon completion of the graduate certificate, students will be better prepared to meet the challenges of accidental or deliberate food contamination within the food industry to protect public health, prevent foodborne illnesses, and facilitate or improve the profitability of food industries by minimizing health risks related to foodborne pathogens and toxicants.

The certificate program requires 12 credit hours comprised of core and elective courses, as outlined below. Students must complete the required 12 credit hours with a cumulative GPA of at least 3.0 and may have no grade lower than a "B" in any certificate-program course. Students must be enrolled the semester the certificate program is completed.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

Must take 4 courses (8 credit hours) from the list below:

- FDSCI 600 - Food Microbiology **Credits: 2**
- FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food **Credits: 3**
- FDSCI 730 - A Multidisciplinary Overview of Food Safety and Security **Credits: 2**
- FDSCI 731 - Food Protection and Defense--Essential Concepts **Credits: 2**
- FDSCI 750 - Food Toxicants **Credits: 2**
- FDSCI 820 - Advanced Food Microbiology & Biotechnology **Credits: 2**

Elective Courses

4 credit hours

- AGECE 710 - Comparative Food and Agriculture Systems Credits: 3
- AGECE 805 - Agricultural Marketing Credits: 3
- AGECE 810 - Price, Income and Trade Policies in Agriculture Credits: 3
- DMP 754 - Introduction to Epidemiology Credits: 3
- DMP 816 - Trade and Agricultural Health Credits: 2
- FDSCI 725 - Food Analysis Credits: 3
- FDSCI 731 - Food Protection and Defense--Essential Concepts Credits: 2
- FDSCI 751 - Food Laws and the Regulatory Process Credits: 2
- FDSCI 791 - Advanced Application of HACCP Principles Credits: 3
- FDSCI 810 - Fermented Foods Credits: 2
- FDSCI 815 - Advanced Food Chemistry Credits: 3
- FDSCI 820 - Advanced Food Microbiology & Biotechnology Credits: 2
- FDSCI 961 - Graduate Problem in Food Science Credits: 1-6
- Other courses as deemed appropriate by the Food Science Program Chair.

Total Hours Required for Graduate Certificate: 12

Master of Science

Animal Sciences (MS)

The Department of Animal Sciences and Industry is a comprehensive unit supported by about 50 faculty devoted to research, teaching, and extension activities related to domestic farm animal species. Currently, the department has approximately 1,000 undergraduate students advised in the department and about 60 graduate students pursuing either M.S. or Ph.D. degrees in the Animal Science graduate program.

For graduate training, the department has animal research and teaching units located conveniently to the main campus. Those units include beef (grazing and feedlot), dairy, swine, sheep, poultry, and horse teaching and research units. In addition, both Call Hall and Weber Hall contain laboratories equipped to conduct most analytical techniques required for research.

Graduate training in the Department of Animal Sciences and Industry is organized within six functional discipline groups including animal breeding and genetics, meat science, monogastric nutrition, physiology, ruminant nutrition, and food science. The food science program represents a large interdisciplinary degree program and is detailed in a separate area in the catalog.

Admission Requirements

Application for admission to graduate school should begin as early as possible in the semester before the proposed admission date (i.e., for fall semester, begin application process early in the preceding spring semester). All applicants must submit a completed application form, three letters of recommendation, and official transcripts of all previous college work. In addition, the applicant should write a short statement of objectives to include the discipline area (and animal species if appropriate) in which the student desires to study. The statement of objectives should specify faculty with whom he/she desires to work as a graduate student. This information is important in placing prospective graduate students with major professors whose area of research coincides with their areas of interest.

M.S. programs in Animal Science are predominantly research based, so each student must have a faculty advisor who guides the research program. Typically, the most limiting step for gaining admission to graduate school is finding a faculty member to serve as advisor. Prospective graduate students are encouraged to visit directly with faculty working in their area of research interest to learn more about their research programs and determine if they are planning to accept additional students into their program. International applicants must meet English proficiency requirements as described in the Graduate School handbook (<https://www.k-state.edu/grad/student-success/graduate-handbook/chapter1.html>).

The Graduate Record Examination is not required for admission, but it may be helpful in the evaluation process.

Upon receipt of all required application documentation, the applicant's file will be reviewed by the departmental Graduate Committee which includes graduate faculty representing each of the five discipline areas. If the student is deemed acceptable for admission, a graduate faculty member willing to serve as major professor must be identified before the student's credentials are forwarded to the graduate school.

Limited numbers of Graduate Research Assistantships and Graduate Teaching Assistantships are available on a competitive basis. Individual faculty members make the key decisions about providing assistantships. For students awarded a Graduate Research Assistantship, student tuition and fees are assessed at in-state resident rates. For students awarded a Graduate Teaching Assistantship, tuition is waived.

Special Requirements

Graduate students in Animal Science are required to assist in teaching a course during each Spring and Fall semester, although waivers can be granted, notably during the student's final semester.

Course Requirements

Options for completing M.S. in Animal Science include the thesis option and the report option. For the thesis option, students must complete 6 to 8 hours of ASI 899 (Master's Research in Animal Sciences and Industry). For the report option, students must complete 2 hours of ASI 898 (Master's Report).

Programs of study must follow the policies of the Graduate School (<https://www.k-state.edu/grad/student-success/graduate-handbook/chapter2.html#Program-of-Study>). For both options, students must complete 30 credit hours, which must include 2 hours of ASI 890 (Graduate Seminar in Animal Sciences and Industry).

Classes vary depending upon the discipline of specialization as well as the student's educational objectives. Courses are mostly in the areas of animal science, statistics, biochemistry, and biology.

All graduate students in Animal Science are required to assist in teaching a course during each Spring and Fall semester, although waivers can be granted, notably during the student's final semester.

Thesis Option

Required Courses:

- ASI 890 - Graduate Seminar in Animal Sciences and Industry **Credits:** 1 (2)

Thesis Option:

- ASI 899 - Master's Research in Animal Sciences and Industry **Credits:** 1-18 (6-8)

Report Option

Required Courses:

- ASI 890 - Graduate Seminar in Animal Sciences and Industry **Credits: 1 (2)**

Report Option:

For 2 hours of credit on research or on a problem.

- ASI 898 - Master's Report **Credits: 2**

Areas of Specialization

Animal breeding and genetics

Graduate programs are designed specifically for each student to acquire training in genetics, animal breeding, and statistics. Additional courses will be selected from the fields of biological and physical sciences. A typical program of study will include some of the following graduate level courses: statistical and population genetics; animal breeding; statistics and experimental design; genomics; and molecular biology. Research is conducted using field data from cooperating ranches, breed association, and universities. Facilities are available for adequate analysis of most data sets, including access to software used in genetic evaluation as well as access to high performance computing resources for analysis of high-throughput genomic and sequencing datasets.

Meat science

The meat science program is comprehensive and prepares students for fundamental and applied research, product and process development, and technical service in industry, academic, regulatory, and international positions. Faculty conduct research in tissue growth and development; ante- and post-mortem factors and processes affecting meat quality and composition; myofibrillar, collagen, and pigment chemistry; packaging; lighting; byproduct value enhancement; processed meats; quality assurance; and safety of meat and meat products. Facilities include a fully equipped meat laboratory that permits experimental and industry-like fresh and processed meat processing; research laboratories for physical and chemical analyses; and thermal processing, display, and sensory facilities for instrumental and sensory panel evaluation of meat products. Graduate students are actively involved in teaching, research, and extension activities as part of their training.

Monogastric nutrition

The monogastric nutrition teams offer comprehensive training that weaves a basic understanding of nutrition into an applied research program. Areas of specialized emphasis include comprehensive programs in swine, equine, and poultry nutrition. The K-State swine nutrition program is a national leader in conducting applied field research in modern commercial swine facilities. This allows graduate students to be exposed to the swine business while conducting timely and industry-leading research. Areas of research include amino acid and energy nutrition, utilization of alternative feed ingredients, influences of technological advances on nutritional requirements, and effects of feed processing technologies on nutrient utilization.

The Equine Nutrition program at K-State has one of only two university-owned herds of cecally cannulated horses. This allows graduate students a research program focused on nutrient digestion and absorption, the equine hindgut's microbiome, and the cecal environment.

The poultry program focuses not only on broiler and laying hen nutrition, but gamebird nutrition as well. Research areas include feed processing and nutrient requirements of poultry.

Graduate students are offered an array of course work to develop areas of expertise. Common areas of training include basic nutrition, biochemistry, statistics, and grain science. Seminars and discussion groups are an integral part of the graduate program.

Physiology

Animal Sciences and Industry (ASI) graduate students pursuing a M.S. degree in physiology will be exposed to a comprehensive, interdisciplinary program that may consist of multiple species including cattle, pigs, horses, sheep, goats, and poultry. Physiology course work and seminars span across many areas within ASI and across related departments including statistics, biochemistry, biology, psychology, and anatomy and physiology. Graduate students have the opportunity to develop teaching skill sets by contributing to our extensive ASI undergraduate program, and many students assist with our state and regional extension efforts. Research expertise can be gained in multiple areas across physiology, including basic research in molecular, cellular, and tissue function; translational research in endocrinology, gamete function, embryology, stress physiology, immunology, and neurobehavioral mechanisms; and applied research in reproduction, health, behavior, and animal welfare. Graduate training in physiology prepares students for various careers in animal and biotechnological industries, research, teaching, technical services, consulting, youth and adult extension, and related fields of animal physiology.

Ruminant nutrition

Scientists within the ruminant nutrition program maintain the dual goals of conducting research that will advance the understanding of fundamental nutritional phenomena and also provide insight into practical aspects of the nutritional management of ruminant livestock. Individual research programs range from basic to very applied. Students in the program are provided with a strong foundation in ruminal and post-ruminal digestion, metabolism, and fundamental experimental procedures necessary for conducting ruminant nutrition research. Areas of research emphasis within the ruminant nutrition group include dairy cattle nutrition, beef feedlot nutrition, grazing livestock nutrition, measurement of greenhouse gas emissions, and stocker cattle nutrition.

Supporting course work is frequently pursued in the areas of biochemistry, grain science, microbiology, physiology, and statistics.

Total Hours Required for Master's: 30

Communications and Agricultural Education

Jason Ellis, Head

Gaea Hock, Director of Graduate Studies

301 Umberger Hall

785-532-5804

Fax: 785-532-5633

<http://www.communications.k-state.edu/>

Agricultural and Occupational Safety and Health Graduate Certificate

This certificate will provide students with knowledge and skills to fulfill the workplace safety and health management duties they will encounter during their careers in agriculture and related industries. Safety and health management is a rapidly growing field. Qualified workers are needed to fill new openings and to replace the aging workforce. Safety and health professionals enter the field from a variety of scientific, manufacturing, health, technical, and social science disciplines. Completion of this certificate will help qualify students for safety-related employment in conjunction with their undergraduate and graduate degrees from

Kansas State University.

Contact the graduate program director/coordinator: Dr. Gaia Hock, Professor, Agricultural Education, ghock@ksu.edu, 785-532-1166.

Admission Requirements

Admission to the Graduate School as a degree-seeking or non-degree-seeking student.

Graduation Requirements

To be awarded the graduate certificate, the student (a) must have earned all the required credits in the six years prior to the semester in which the certificate plan is submitted, (b) must not be on probation, (c) must have a cumulative GPA of 3.0 or higher on graduate coursework and on coursework applied to the certificate, (d) must meet all the requirements of the Graduate School and the certificate program, (e) must be enrolled during the semester when the student applies for graduation for the certificate, and (f) must provide official transcripts for any approved transfer credits. Transfer credit must be from an accredited institution.

Course Requirements

Required Courses

- ASMS 723 - Agricultural and Occupational Safety I **Credits: 3**
- ASMS 724 - Agricultural and Occupational Health I **Credits: 3**
- ASMS 753 - Agricultural and Occupational Safety II **Credits: 3**
- ASMS 754 - Agricultural and Occupational Health II **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Agricultural Education and Communication (MS)

A master's of science in Agricultural Education and Communication is a research degree that aims for the discovery of knowledge, the education of graduate students, and the improvement in the quality of life for those we serve. Three levels of research intensity are offered: Thesis (30 credit hours), Report (32 credit hours), and Non-Thesis/Project (36 credit hours). Graduates will develop the foundation for research and the ability to educate the public in the breadth and depth of the agricultural industry and communicate information to the agricultural industry as well as the general public.

Admission Requirements

1. A bachelor's degree from a college or university accredited by the regional accrediting agency.
2. Grade point average (GPA) of 3.0 or higher on a 4.0 scale in the last 60 hours of coursework. This GPA is based only on courses graded on a multilevel scale, usually A, B, C, D, F.
3. For students who do not meet the above-stated GPA requirement, an alternative would be a combined verbal/quantitative score of 300 or higher on the Graduate Record Examination (GRE) for tests taken after August 1, 2011.
4. Recommendation letters from three people knowledgeable of the applicant's professional qualifications.
5. A statement of purpose for pursuing the master's degree.

Contact the Graduate Coordinator, Dr. Gaea Hock ghock@ksu.edu, 785-532-5633.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

Research

Choose one of the following. Other courses may be proposed to the student's graduate committee.

- AGED 800 - Research Methods in Agricultural Education and Communications **Credits: 3**
- COMM 710 - Introduction to Communication Research Methods **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**
- MC 780 - Research Methods in Mass Communications **Credits: 3**

Philosophical Context

Choose one of the following. Other courses may be proposed to the student's graduate committee.

- AGED 820 - History and Philosophy of Agricultural and Extension Education **Credits: 3**
- AGED 830 - The History and Leadership of the Land Grant University **Credits: 3**
- EDCI 812 - History of Education **Credits: 3**
- EDCI 813 - Comparative Philosophies of Education **Credits: 3**
- HIST 557 - History of American Agriculture **Credits: 3**
- MC 710 - History of Mass Communications **Credits: 3**
- SOCIO 831 - Sociology of Agriculture **Credits: 3**

Theoretical Foundation

Choose one of the following. Other courses may be proposed to the student's graduate committee.

- AGCOM 844 - Theory in Agricultural Communications **Credits: 3**
- AGED 790 - Agricultural Education Methods and Practicum for Teaching and Learning **Credits: 3**
- AGED 832 - Foundations and Theory of Agricultural Leadership **Credits: 3**
- AGED 840 - Advanced Theory and Methods of Teaching Agriculture **Credits: 3**

Additional Requirements for Thesis Option

Data Analysis

Choose one of the following. Other courses may be proposed to the student's graduate committee.

- AGED 810 - Social Data Analysis in Communications and Agricultural Education **Credits: 3**
- AGED 838 - Qualitative Design in Agricultural Education and Communications **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**

- SOCIO 824 - Qualitative Methodology **Credits: 3**

Thesis Option Courses

Choose 6 hours from the following:

- AGCOM 899 - Master's Thesis **Credits: 1-6**
- AGED 899 - Master's Thesis **Credits: 1-6**

Electives

Choose 12 hours of electives. Elective courses available subject to approval by the student's graduate committee.

Additional Requirements for Report Option

Leadership

A minimum of 3 credit hours must focus on Leadership. Classes may be selected from AGED, AGCOM, EDACE, or LEAD. Other courses may be proposed to the student's graduate committee.

Report Option Courses

Choose 2 hours from the following:

- AGCOM 890 - Master's Project **Credits: 1-2**
- AGED 890 - Master's Project **Credits: 1-3**

Electives

Choose 18 hours of electives. Elective courses available subject to approval by the student's graduate committee.

Additional Requirements for Non Thesis/Report Option

Leadership

A minimum of 3 credit hours must focus on Leadership. Classes may be selected from AGED, AGCOM, EDACE, or LEAD. Other courses may be proposed to the student's graduate committee.

Electives

Choose 24 hours of electives. Elective courses available subject to approval by the student's graduate committee.

Total Hours Required for Master's: 30-36

Entomology

Brian McCornack, Head
Gregory Zolnerowich, Director of Graduate Studies

123 Waters Hall
785-532-6154
Fax: 785-532-6232
entomology@k-state.edu
<http://www.entomology.ksu.edu>

Introduction

The Department of Entomology at Kansas State University has an internationally recognized graduate program, leading to the M.S. or Ph.D. degree and an MS graduate certificate program. A wide variety of opportunities for graduate study are offered in several areas of research in which the faculty have established expertise. These areas include

- arthropod pest management
- agrospatial, behavioral, chemical ecology
- biocontrol
- molecular, developmental, and population genetics
- physiological, biochemical, toxicological, and molecular insect science
- plant resistance to insects
- molecular and ecosystem plant/insect interactions
- stored-product entomology
- ecology, systematics, and evolution
- public and animal health entomology

The department is housed in Waters Hall, and maintains excellent research facilities with state of the art research equipment, a student computer laboratory, and a research insect collection. Classrooms and teaching laboratories have been renovated and utilize multimedia-assisted instructional aids. Facilities include 22 greenhouses of various sizes, bioclimatic chambers, and rearing rooms. Field research is conducted on experimental farms at Manhattan and at branch experiment stations throughout the state. Cooperative research programs exist with the KSU Departments of Animal Sciences and Industry; Agronomy; Biochemistry and Molecular Biophysics; Grain Science and Industry; Plant Pathology; Horticulture, Forestry and Recreational Resources; the Wheat Genetics Resource Center; the College of Veterinary Medicine; the U.S. Grain Marketing Production and Research Center, and other U.S. and international organizations.

The department currently has 17 permanent, and 30 adjunct/ancillary faculty, four full-time office staff, about 30 postdoctoral and technical support staff, over 30 graduate students, and several other temporary personnel and numerous undergraduate students involved in research. The faculty have received awards for excellence in research, teaching, and extension, and serve in leadership positions with various professional societies, grant panels, blue ribbon panels, etc. Faculty receive competitive research grants from the National Institutes of Health, National Science Foundation, United States Agency for International Development, Environmental Protection Agency, and the U.S. Department of Agriculture-National Institute for Food and Agriculture Programs, Pest Management Alternatives Program, Risk Avoidance and Mitigation Program, etc., in addition to various industries and commodity commissions.

Extension Entomologists are broadly knowledgeable over a wide range of insect and related arthropod topics. Public support is offered through an insect identification and diagnostic service, 4-H and Youth programs, pesticide safety training, and training for pesticide application certification. An integrated pest management approach is used in providing the public with programs and information on insects and other arthropods of importance to field and horticultural crops, livestock, stored grain, residential environs, and human health. Programming is routinely coordinated among entomologists and members of other academic departments and many governmental agencies.

The goal of the department is to provide graduate students with opportunities for basic and practical experiences in research, teaching and extension, and for significant professional development. Students publish their research findings in leading scientific journals and participate in the preparation of extramural grant proposals. All students are afforded opportunities to

present their findings at professional meetings. Our graduate students routinely win local, regional, national, and international awards for their research endeavors, and compete in the annual Entomology Games sponsored by the Entomological Society of America, winning national and regional championships several times. In addition to a seminar series that brings nationally and internationally recognized scientists to the department, faculty and students participate in journal discussion groups on a variety of entomological topics.

The Popenoe Entomology Club (<https://popenoe.org>) is a very active group that offers students opportunities for outreach, professional development, collecting insects, funds for travel, and numerous social activities. The club was named the K-State Student Organization of the Year in 2024.

The department offers unparalleled outreach opportunities through its outstanding and well-recognized Insect Zoo, which is located in the Kansas State University Gardens. Students, staff, and faculty volunteer to serve as tour guides and in its maintenance. The mission of the Insect Zoo is to foster a better understanding and increased awareness of our natural world and of the important roles that insects and their relatives play in it. The Insect Zoo offers an interactive experience for visitors who will experience the sights, sounds, and smells of live creepy crawlies, including giant cockroaches, centipedes, scorpions, spiders, tarantulas, beetles, walking stick, and praying mantises. Visitors also can "pet" some of the animals during show-and-tell demonstrations by the staff. The Insect Zoo features a number of exciting educational exhibits including the Mick Hilleary-designed tropical tree/flooded Amazonian rainforest. Other fascinating exhibits are The Desert-Scape, observation beehive, and a mock kitchen. Many interactive learning stations with touch-screen computers along with colorful posters offer additional information on butterflies, insects, arthropods, and plants.

Financial assistance

Stipends

The Department of Entomology supports graduate study and development in numerous ways. Stipends are available as graduate research and teaching assistantships. Department faculty successfully secure research grants from federal agencies, commodity commissions, agribusiness corporations, and private foundations that fund many graduate students on research assistantships. Check with the department for current rates. Student tuition and fees are not waived, but are assessed at in-state rates for all graduate assistants.

Master's students are encouraged to seek teaching experience. Ph.D. students are required to seek teaching experience. A student can obtain teaching experience as a paid, non-credit hour teaching assistant or a graduate teaching assistant receiving variable credit for ENTOM 932 Topics in General and Systematic Entomology.

Performance requirements for continuation

In order to maintain financial assistance from assistantships or fellowships for teaching or research, graduate students are expected to maintain a B average in all course work. Failure to maintain a B average will result in academic probation for one semester before reinstatement as a regular graduate student.

Accelerated

Accelerated Entomology (BS)/ Entomology (MS)

The accelerated Accelerated Entomology (BS)/Entomology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Entomology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Entomology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ENTOM 625 - Integrative Behavioral Ecology **Credits: 3**
- ENTOM 649 - Introduction to Arthropod Vectors of Human Pathogens **Credits: 3**
- ENTOM 660 - Introduction to Insect Genetics **Credits: 3**
- ENTOM 692 - Insect Ecology **Credits: 3**
- ENTOM 799 - Problems in Entomology **Credits: 1-18**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Entomology (PHD)

The Department has an internationally recognized graduate program leading to the M.S. and Ph.D. degrees. A wide variety of opportunities for graduate study are offered in several areas of applied and basic research such as integrated pest management, molecular biology, toxicology, ecology, medical-veterinary entomology, and others. Graduates go on to Ph.D. programs, postdoctoral positions, other academic positions, government agencies and non-government organizations, and private industry.

The doctoral degree requires 90 credits beyond the B.S. degree, or at least 60 credit hours beyond an M.S. degree (incorporating a research thesis), including a dissertation of at least 30 credits. See the doctoral degree program requirements in the Graduate Handbook for additional information: <https://www.k-state.edu/grad/student-success/graduate-handbook/chapter3.html>

The Program Contact is Crystal Ly (cly@ksu.edu) and the Graduate Program Director is Dr. Gregory Zolnerowich (gregz@ksu.edu).

Admission Requirements

- Applicants for graduate study are expected to have a background in biology, chemistry, mathematics, and the physical sciences.
- An overall 3.0 GPA (B average, 80% or better) is expected.
- GRE scores are not required but GRE scores can be helpful in the application process, if available.
- Applicants cannot be admitted to the graduate degree program unless there is a formal commitment by a faculty member to serve as the major advisor.

Prospective applicants are encouraged to contact the Graduate Program Director or faculty members to express their interest and determine availability of space and funding for a particular research program.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Fifteen of the minimum of 24 hours of coursework credit hours beyond the M.S. degree normally required by the advisory committee should be at the 800-level or above. Depending on the research program and input from the student's advisory committee, students might also take courses from departments such as Biochemistry, Biology, Geography, Plant Pathology, and Statistics.

- ENTOM 795 - Entomology Seminar **Credits: 1**
- ENTOM 800 - Professional Development in Entomology and Related Sciences **Credits: 2**
- ENTOM 932 - Teaching Experience in Entomology **Credits: 1-3**

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Entomology Graduate Certificate

Contact: Gregory Zolnerowich

E-mail: gregz@ksu.edu

Home Page: <https://entomology.k-state.edu/about/people/faculty/Zolnerowich-Gregory.html>

Graduate students in several disciplines -- agronomy, animal science, biochemistry, biological sciences, genetics, veterinary diagnostic medicine and pathobiology, horticulture, and plant pathology -- are conducting research on topics that may include

insects and plant protection/pest management. Such students may wish to demonstrate proficiency in entomology, making them more suitable for certain jobs. In order to strengthen their educational programs and the quality of graduate education without detracting from their existing graduate degree programs, an entomology graduate certificate program has been developed through the Department of Entomology. Its objectives are to prepare graduates for careers related to entomology or plant protection/pest management, encourage interdisciplinary educational experiences in entomology and enhance the educational experiences of participating graduate students.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Special Requirements:

At the master's and Ph.D. level, 12 credit hours are required PLUS one credit of Entomology Seminar (ENTOM 995) in which the student presents an oral seminar to the Department. The list of courses can include BIOCH 907 (Advanced Topics in Insect Biochemistry). The certificate program will require a focused and thematic program of study in the various sub-disciplines of entomology, which would complement the student's interest and area of expertise, thus, helping develop additional skills. In lieu of a course based on classroom work, a student may register for ENTOM 899 or ENTOM 999 Research in Entomology, and undertake a research project or register for ENTOM 799 Special Topics, and undertake specialized, independent study. The certificate program requires that it be a blend of traditional and experiential learning opportunities. Students will be advised by entomology faculty on thematic foci and requirements.

Course Requirements

Required Courses

- ENTOM 995 - Entomology Seminar **Credits: 1**

Elective Courses:

12 credit hours

- BIOCH 907 - Advanced Topics in Insect Biochemistry **Credits: 3**
- ENTOM 612 - Insect Pest Diagnosis **Credits: 2**
- ENTOM 620 - Pesticides, People, and the Environment **Credits: 2**
- ENTOM 692 - Insect Ecology **Credits: 3**
- ENTOM 695 - Insect Taxonomy **Credits: 3**
- ENTOM 799 - Problems in Entomology **Credits: 1-18**
- ENTOM 805 - Insects of Stored Products **Credits: 3**
- ENTOM 815 - Experience in Extension Entomology **Credits: 1-3**
- ENTOM 821 - Biological Control **Credits: 3**
- ENTOM 857 - Toxicology of Insecticides **Credits: 3**
- ENTOM 875 - Insect Physiology **Credits: 3**
- ENTOM 892 - Advanced Insect Ecology **Credits: 3**
- ENTOM 898 - Master's Report in Entomology **Credits: 1-18**
- ENTOM 899 - Master's Research in Entomology **Credits: 1-18**
- ENTOM 860 - Insect Genetics **Credits: 3**
- ENTOM 825 - Advanced Integrative Behavioral Ecology **Credits: 3**

- ENTOM 930 - Topics in Entomology **Credits:** 1-9
- ENTOM 932 - Teaching Experience in Entomology **Credits:** 1-3
- ENTOM 999 - Research in Entomology **Credits:** 1-18

Total Hours Required for Graduate Certificate: 13

Master of Science

Entomology (MS)

The Department has an internationally recognized graduate program leading to the M.S. and Ph.D. degrees. A wide variety of opportunities for graduate study are offered in several areas of applied and basic research such as integrated pest management, molecular biology, toxicology, ecology, medical-veterinary entomology, and others. Graduates go on to Ph.D. programs, postdoctoral positions, other academic positions, government agencies and non-government organizations, and private industry.

The Master's degree requires a minimum of 30 hours of graduate credit beyond the B.S. degree. See the M.S. degree program requirements in the Graduate Handbook for additional information: <https://www.k-state.edu/grad/student-success/graduate-handbook/chapter2.html>

Admission Requirements

- Applicants for graduate study are expected to have a background in biology, chemistry, mathematics, and the physical sciences.
- An overall 3.0 GPA (B average, 80% or better) is expected.
- GRE scores are not required but GRE scores can be helpful in the application process, if available.
- Applicants cannot be admitted to the graduate degree program unless there is a formal commitment by a faculty member to serve as the major professor.

Prospective applicants are encouraged to contact the Graduate Program Director or faculty members to express their interest and determine availability of space and funding for a particular research program.

The Program Contact is Crystal Ly (cly@ksu.edu) and the Graduate Program Director is Dr. Gregory Zolnerowich (gregz@ksu.edu).

Course Requirements

Depending on the research program and input from the student's advisory committee, students might also take courses from departments such as Biochemistry, Biology, Geography, Plant Pathology, and Statistics. Students work with their major professors to develop programs of study that meet course credit requirements for their particular focus.

Thesis Option

Students are required to have a minimum of 22 hours of coursework, with at least 18 hours from 700-level courses and above.

- ENTOM 899 - Master's Research in Entomology **Credits:** 1-18 (6-8 credits)

Report Option

Students are required to have a minimum of 28 hours of coursework, with at least 18 hours from 700-level courses and above.

- ENTOM 898 - Master's Report in Entomology Credits: 1-18 (2 credits)

Total Hours Required for Master's: 30

Grain Science and Industry

Joseph Awika, Department Head
Yonghui Li, Director of Graduate Studies

201 Shellenberger Hall
 785-532-6161
 Fax: 785-532-7010
grains@k-state.edu
<http://www.grains.ksu.edu>

Programs

The Department of Grain Science and Industry offers courses of study leading to degrees of master of science and doctor of philosophy in grain science. Grain science faculty collaborate with the scientists at the USDA-ARS Research Laboratories and there are graduate programs that are collaborative with those laboratories.

Modern teaching and research facilities include a pilot flour mill, feed mill, bakery, extrusion laboratory, and grain storage and handling facility. In addition, more than 10 cereal chemistry laboratories are equipped with visible and ultraviolet spectrophotometers, near infrared analyzers, an infrared microspectrometer, gas chromatographs, liquid chromatographs, ultra centrifuge, freeze drying apparatus, balances, rapid viscosity analyzer, differential scanning calorimeter, thermo-mechanical analyzer, classical rheometer (Instron), dynamic rheometers, gel electrophoresis apparatus, a full array of glassware, rapid analyzers for nitrogen, fiber, and glucose, as well as recording mixers and starch viscometers.

The department has academic interest in the milling industry with particular emphasis on milling and baking properties of wheat cultivars since 1905. The wheat milling facilities range from a bench-scale mill (batch of 0.5 kg of grain) to a pilot mill with a capacity of 1 MT/hour. Specialty dry mills also are available to purify, fractionate, and grind any seed-like material, including all cereals, legumes, pulses, spices, and gums.

Another unique feature of the department is its fully functional pilot feed mill for research and development studies by university, industry, and government organizations. The feed mill at Kansas State University houses the latest in equipment in the feed milling industry. Its capabilities include cleaning and receiving raw materials, classification of raw materials, grinding and pelleting, flaking, or extruding. A premix room for microingredients and a large-scale batching system facilitate accurate proportioning and weighing of feed ingredients. The feed mill is capable of producing nearly all physical forms of formulated animal feeds.

A food-grade extrusion processing facility, houses a Wenger model X-20 single-screw extruder, a Wenger model TX-52 twin-screw extruder, and a gas-fired belt dryer.

Departmental facilities for research include well-equipped laboratories for all areas of research in cereal chemistry. This includes laboratories equipped for chemical research and special laboratories equipped for studies of the physical properties of flour, doughs and food systems. Pilot bakery facilities provide an excellent environment for teaching and research. A fully-equipped computer laboratory is available to all students.

Admission

Correspondence and questions regarding Graduate School are handled by the chair of the Graduate Program Committee, and the graduate services coordinator. Information and application forms can be found on the department website. <https://www.grains.k-state.edu/academics/graduate-programs>

Applicants need to complete the Graduate School application form, obtain and submit the official transcripts and three letters of recommendation and form. Additionally, applicants should write a well-thought out statement of objectives which should include the discipline area in which the student has an interest and desires to perform research. Applicants should have a B average or better and have completed courses in Mathematics, including College Algebra, Calculus and Statistics; Chemistry, including Biochemistry and Organic Chemistry; Physics and Biological Sciences. Submit all application materials to the attention of the Graduate Program through the Graduate School website.

All applicants whose native language is not English are required to submit a TOEFL or IELTS score. The Grain Science Graduate Program Committee requires a minimum TOEFL score of 79, or a minimum score of 6.5 on the IELTS. We give preference to students with higher TOEFL or IELTS scores and academic records.

The Graduate Record Exam (GRE) is not required.

International students must provide a completed financial form and evidence of financial support for their graduate training.

When the application materials are in hand, the department's graduate program committee will evaluate them and provide a recommendation of action. A student that is found to be acceptable will then be submitted to the graduate faculty for possible selection. No student will be admitted without a major professor identified. Once a student is matched with a major professor the application is then forwarded to the department head for approval and then to the Graduate School. The Graduate School has the ultimate authority for graduate admission.

Assistantships

Graduate research assistantships in Grain Science and Industry are designed to support the research project areas of the individual faculty members. Those projects may be Kansas Agricultural Experiment Station projects directed by the faculty member or sponsored research projects funded by industrial, state, or federal agencies. In all cases, the decisions regarding support and awarding of assistantships are made on a competitive basis. Funds are not always adequate to award assistantships to all students who would like support. Decisions regarding initial and continuing support are based on both academic performance and research progress. Failure to maintain high quality academic work or research activity can be reason to cancel or discontinue an assistantship.

Doctor of Philosophy

Grain Science (PHD)

The Ph.D. degree offered through the Grain Science and Industry graduate program normally requires at least three years beyond the master's degree. It is awarded to candidates who have demonstrated unique ability as scholars and researchers and proficiency in communication. The degree also certifies that the candidate has an understanding of the subject matter in the discipline and possesses the ability to make original contributions to knowledge.

Admission Requirements

Graduate study beyond the bachelor's degree equivalent to 90 or more semester hours is required for the doctor of philosophy degree. Those hours include enrollment in at least 30 hours of research. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate. At least a year in residence at the university is required.

The student and major professor select an advisory committee. Selection of the committee is subject to approval by the Graduate School. The committee consists of the major professor and at least three other members of the graduate faculty. One member of the committee must be a member of the graduate faculty in a department other than that of the major professor.

The duties of the supervisory committee include advising the student on preparation of a plan of study and development of a doctoral research proposal, administration of a preliminary written examination, approval of the final form of the dissertation, and administration of the final oral examination.

It is expected that each graduate student's dissertation or thesis will be published in the scientific literature. Graduate students are expected to prepare draft manuscripts prior to or by the time of their final oral exam. Publication of some items can precede publication of thesis or dissertation but guidance regarding prior publication should be followed.

Students without the prerequisite must have the permission of the instructor.

Course Requirements

Grain science includes the science and technology of cereals and other grains, their basic properties and their utilization in foods, feeds, and other industrial products. Knowledge of chemical, biological, physical, and mathematical sciences is fundamental to grain scientists. As part of their degree programs, students will develop strong written and oral communication skills.

The course requirements for each graduate student in grain science will be drawn from the fields listed above. Specific requirements for each individual will be determined by the major professor and approved by the student's graduate committee, with due consideration given the student's qualifications and professional plans and interests. Students may be required to make up deficiencies in course work in their undergraduate curriculums.

Suggested courses for the M.S. degree

All students:

- A graduate-level grain science course in at least one specialized area (i.e., baking, milling, feed science, extrusion)
- A statistics course at the 700 level
- BIOCH 521 - General Biochemistry **Credits: 3**
or
- BIOCH 755 - Biochemistry I **Credits: 3**
- BIOCH 756 - Biochemistry I Laboratory **Credits: 2**
- GRSC 602 - Cereal Science **Credits: 3**
- GRSC 815 - Fundamentals of Processing Grains for Food **Credits: 3**
- GRSC 900 - Professional Development in Grain Science **Credits: 1**

Additional suggested courses for the Ph.D. degree

Graduate level courses in chemistry, biochemistry or other basic science in support of PhD research

- BIOCH 755 - Biochemistry I **Credits: 3**
- GRSC 900 - Professional Development in Grain Science **Credits: 1**
or another graduate seminar

Cereal science programs

10 credit hours of chemistry and/or physics, including an advanced course in biochemistry and an acceptable course in physical chemistry which has calculus as a prerequisite.

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Credit Hours Required for Doctorate: 90

Master of Science

Grain Science (MS)

The Department of Grain Science & Industry at Kansas State University has an internationally recognized graduate program, leading to the M.S. or Ph.D. degree in Grain Science. A wide variety of opportunities for graduate study are offered in areas of both applied and basic research.

Contact information:

Graduate Program Director: Dr. Yonghui Li (yonghui@ksu.edu).

Admission Requirements

Please refer to the general information for graduate student at <https://www.grains.k-state.edu/academics/graduate-programs/index.html>.

Graduation Requirements

The MS degree program in the Department of Grain Science and Industry only offers a thesis degree but no non-thesis MS degree. See detailed master's degree program requirements in Graduate Handbook.

1. A committee of at least three graduate faculty members supervises the program of study for the master's degree. The candidate's major professor serves as committee chair. The committee is selected by the student and his or her major professor, with selection of the committee subject to approval by the Graduate School. The KSU graduate handbook Chapter 2 Section B defines the supervisory committee's responsibilities in guiding MS students.
2. A master's degree requires a minimum of 30 semester hours of graduate credit including 6 to 8 research credit hours resulting in a thesis. To be awarded a graduate degree, the student is required to maintain minimum B (3.0) grade point average. Please refer to the KSU graduate handbook-Chapter 2: The Master's Degree at <https://www.k-state.edu/grad/student-success/graduate-handbook/chapter2.html>.
3. If the student has a graduate research assistantship (GRA or GTA), the student must take a minimum of 6 credit hours in the fall and spring semesters and at least 3 credit hours in summer.
4. Before the end of the second semester, the student and the major professor will develop a plan/program of study (POS) (a list of the courses to be completed and applied towards the graduate degree) and form the thesis advisory committee.
5. The student must submit a written POS to the Graduate School prior to the end of the second semester that the candidate is enrolled at Kansas State University.
6. A candidate will submit the thesis to all committee members ten working days before the examination date. A copy is to be available at the final oral examination. All graduate students are required to submit an electronic version of their

thesis. Detailed information about the K-State electronic Theses, Dissertations, and Reports (ETDR) can be found at <http://www.k-state.edu/grad/etdr/index.htm>.

7. A final oral examination/defense is required for all students. This may also include interpretation of other scholarly work, and testing of the students' understanding of their fields of study.

Course Requirements

The program of study for the Master of Science program in grain science requires 30 total credits to include the following:

1. At least 18 hours including the thesis/research hours should be at the 700-level and above.
2. Courses at the 600-level may be included, but 500-level courses in the student's major area (i.e., courses in grain science) are expected to have been completed as undergraduate prerequisites to graduate study or as undergraduate deficiency courses assigned to admission and thus not included on the plan of study.
3. Restrictions: (1) No course in the student's major area may be at the 500-level (2) Normally no more than 6 credit hours may be at the 500-level. No more than 3 credit hours in "special problems" (e.g., GRSC 790) or other individualized courses may be applied to the master's degree.

Required Courses

(2 credit hours) Professional development skill.

- GRSC 900 - Professional Development in Grain Science **Credits: 1**
- GRSC 920 - Grain Science Graduate Seminar **Credits: 1**
- GRSC 899 - Research in Grain Science **Credits: 1-18** (6-8 hours)

Elective Courses

(20-22 credit hours)

Because Grain Science graduate students may have different undergraduate majors, the pathway to achieving the desired outcome for the MS degree, requires tailoring the coursework to fit the students' particular situation. Therefore, there are no other listed required courses for this program except for GRSC 900, GRSC 920, and GRSC 899. The graduate students can take courses listed in the catalog of graduate courses which are offered by the Department of Grain Science and Industry. They can also take courses offered by other departments, which should be agreed by their major advisors.

Recommended course (3 credit hours):

-Any 700 and above STAT course

Please refer to the graduate course catalog for detailed course information.

Total Hours Required for Master's: 30

Horticulture and Natural Resources

Steve Keeley, Head

Sunghun Park, Director of Graduate Studies

2021 Throckmorton Hall

785-532-6923

Fax: 785-532-5894

E-mail: hnrinfo@ksu.edu
www.hnr.ksu.edu

Introduction

The Department of Horticulture and Natural Resources offers courses of study leading to degrees of master of science and doctor of philosophy in diverse study areas and graduate certificates in advanced horticulture and horticultural therapy. Study areas include: environmental stress and molecular biology; forestry, recreation and natural resources; horticulture and human health; sustainable food production; and turf and ornamentals.

The department is housed in Throckmorton Plant Sciences Center and has over 15,000 square feet of modern office, laboratory and classroom space and 30,500 square feet of greenhouse space. Faculty have individual research labs, equipped for their specific type of research. Field research is conducted on our five off-campus research centers located in Manhattan and throughout the state. Cooperative research programs exist with the KSU departments of pathology, soil science, entomology, agronomy, biochemistry, microbiology, marketing, food science, health and nutrition, kinesiology, psychology, education and other disciplines.

The department consists of 22 faculty members, about 40 graduate students and 10 research associates, as well as post-doctoral fellows and visiting scientists. The faculty have received awards for excellence in research, teaching, and extension, and serve in leadership positions with various professional societies grants panels, etc. Faculty receive competitive research grants from the National Science Foundation, U.S. Department of Agriculture, U.S. Fisheries and Wildlife, National Park Service, foundations, and industry groups.

The graduate program is dedicated to providing advanced discipline training, breadth and depth in research training, and mentoring to our students. The goal is the scholarly and professional development of research scientists, extension specialists, teachers, and horticultural business leaders.

Admission

Applications are accepted at any time of the year, and graduate studies can begin during fall, spring or summer terms. Applying early increases the probability of being awarded an assistantship. Departmental admission requirements can be found at <http://www.hnr.k-state.edu/graduate/admissions.html>. Applications are completed online at <http://www.k-state.edu/grad/admissions/application-process/>.

Financial Support

Research and teaching assistantships are available on a competitive basis. All students on an assistantship qualify for in-state tuition. Students may also be eligible to apply for fellowships from private and federal sources.

Accelerated

Accelerated Horticulture - Golf Course and Sports Turf Management (BS)/Horticulture and Natural Resources (MS)

The accelerated Accelerated Horticulture - Golf Course and Sports Turf Operations Management (BS)/Horticulture and Natural Resources (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Horticulture and Natural Resources degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the traditional M.S. degree except that completion of the B.S. degree is not required and the GRE score requirement will be waived.

- KSU graduate application form completed on-line and submitted before semester of enrollment. Application fee submitted with application.
- Applicant's statement of academic objective(s) and preferred primary advisor(s) must be submitted with application.
- Three letters of reference are required.
- Transcript(s) of all undergraduate work must be sent to the Director of Graduate Programs in HNR.

Once a student is admitted to the accelerated B.S./M.S degree program, the student should consult the graduate handbook for policies and procedures for M.S. degrees which include: supervisory committee, final examination, etc. The student will work closely with her/his major professor to form a supervisory committee and file a program of study by the end of the first semester of the senior year. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress and research project for the M.S. degree. Research toward the M.S. thesis will begin as soon as possible, but will not begin later than the first semester of the senior year.

Should the student meet these requirements and be approved for admission by the HNR Graduate Admission Committee, admission will be provisional, pending the award of the B.S. degree. The student must complete all of the undergraduate requirements with the exception that up to nine (9) credit hours of graduate level classes taken for graduate credit may be applied toward the 126 credit hour requirement for the undergraduate degree and can also count toward the 30 credit hours required for the M.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Horticulture and Natural Resources (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- HORT 600 - Herbaceous Landscape Plant Production **Credits: 3**
- HORT 706 - Advanced Culture of Golf and Sports Turf **Credits: 3**
- HORT 760 - Business Management for Horticultural Enterprises **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Horticulture - Horticulture Production (BS)/Horticulture and Natural Resources (MS)

The accelerated Accelerated Horticulture - Horticulture Production (BS)/Horticulture and Natural Resources (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Horticulture and Natural Resources degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate electives.

Application Process

The application process is the same as for the traditional M.S. degree except that completion of the B.S. degree is not rerequired and the GRE score requirement will be waived.

- KSU graduate application form completed on-line and submitted before semester of enrollment. Application fee submitted with application.
- Applicant's statement of academic objective(s) and preferred primary advisor(s) must be submitted with application.
- Three letters of reference are required.
- Transcript(s) of all undergraduate work must be sent to the Director of Graduate Programs in HNR.

Once a student is admitted to the accelerated B.S./M.S degree program, the student should consult the graduate handbook for policies and procedures for M.S. degrees which include: supervisory committee, final examination, etc. The student will work closely with their major professor to form a supervisory committee and file a program of study by the end of the first semester of the senior year. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress and research project for the M.S. degree. Research toward the M.S. thesis will begin as soon as possible, but will not begin later than the first semester of the senior year.

Should the student meet these requirements and be approved for admission by the HNR Graduate Admission Committee, admission will be categorized as special, pending the award of the B.S. degree. The student must complete all of the undergraduate rerequirements with the exception that up to nine (9) credit hours of graduate level classes taken for graduate credit may be applied toward the 126 credit hour requirement for the undergraduate degree and can also count toward the 30 credit hours required for the M.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.

- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Horticulture and Natural Resources (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- HORT 600 - Herbaceous Landscape Plant Production **Credits: 3**
- HORT 710 - Plant Cell, Tissue and Organ Culture. **Credits: 3**
- HORT 725 - Postharvest Technology and Physiology of Horticultural Crops **Credits: 3**
- HORT 791 - Urban Agriculture **Credits: 2**
- HORT 794 - Urban Food Systems **Credits: 2**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Horticulture - Landscape Horticulture (BS)/Horticulture and Natural Resources (MS)

The accelerated Accelerated Horticulture - Landscape Horticulture (BS)/Horticulture and Natural Resources (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Horticulture and Natural Resources degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the traditional M.S. degree except that completion of the B.S. degree is not required and the GRE score requirement will be waived.

- KSU graduate application form completed on-line and submitted before semester of enrollment. Application fee submitted with application.
- Applicant's statement of academic objective(s) and preferred primary advisor(s) must be submitted with application.
- Three letters of reference are required.
- Transcript(s) of all undergraduate work must be sent to the Director of Graduate Programs in HNR.

Once a student is admitted to the accelerated B.S./M.S degree program, the student should consult the graduate handbook for policies and procedures for M.S. degrees which include: supervisory committee, final examination, etc. The student will work closely with her/his major professor to form a supervisory committee and file a program of study by the end of the first semester of the senior year. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress and research project for the M.S. degree. Research toward the M.S. thesis will begin as soon as possible, but will not begin later than the first semester of the senior year.

Should the student meet these requirements and be approved for admission by the HNR Graduate Admission Committee, admission will be provisional, pending the award of the B.S. degree. The student must complete all of the undergraduate requirements with the exception that up to nine (9) credit hours of graduate level classes taken for graduate credit may be applied toward the 126 credit hour requirement for the undergraduate degree and can also count toward the 30 credit hours required for the M.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Horticulture and Natural Resources (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- HORT 600 - Herbaceous Landscape Plant Production **Credits: 3**
- HORT 706 - Advanced Culture of Golf and Sports Turf **Credits: 3**
- HORT 760 - Business Management for Horticultural Enterprises **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.

- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Horticulture - Science (BS)/Horticulture and Natural Resources (MS)

The accelerated Accelerated Horticulture - Science (BS)/Horticulture and Natural Resources (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Horticulture and Natural Resources degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the traditional M.S. degree except that completion of the B.S. degree is not required and the GRE score requirement will be waived.

- KSU graduate application form completed on-line and submitted before semester of enrollment. Application fee submitted with application.
- Applicant's statement of academic objective(s) and preferred primary advisor(s) must be submitted with application.
- Three letters of reference are required.
- Transcript(s) of all undergraduate work must be sent to the Director of Graduate Programs in HNR.

Once a student is admitted to the accelerated B.S./M.S degree program, the student should consult the graduate handbook for policies and procedures for M.S. degrees which include: supervisory committee, final examination, etc. The student will work closely with her/his major professor to form a supervisory committee and file a program of study by the end of the first semester of the senior year. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress and research project for the M.S. degree. Research toward the M.S. thesis will begin as soon as possible, but will not begin later than the first semester of the senior year.

Should the student meet these requirements and be approved for admission by the HNR Graduate Admission Committee, admission will be provisional, pending the award of the B.S. degree. The student must complete all of the undergraduate requirements with the exception that up to nine (9) credit hours of graduate level classes taken for graduate credit may be applied toward the 126 credit hour requirement for the undergraduate degree and can also count toward the 30 credit hours required for the M.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- HORT 600 - Herbaceous Landscape Plant Production **Credits: 3**
- HORT 706 - Advanced Culture of Golf and Sports Turf **Credits: 3**
- HORT 710 - Plant Cell, Tissue and Organ Culture. **Credits: 3**
- HORT 725 - Postharvest Technology and Physiology of Horticultural Crops **Credits: 3**
- HORT 794 - Urban Food Systems **Credits: 2**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Horticulture and Natural Resources (PHD)

Horticulture and Natural Resources (PhD)

Admission Requirements

In addition to general Graduate School requirements, the Department of Horticulture and Natural Resources has the following requirements for admission.

Course requirements

No specific course requirements. Applicants for admission to Ph.D. degree programs are expected to have completion of a MS degree in a field relevant to the graduate program of interest.

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Grade requirements

GPA of 3.0 or better on a 4.0 scale, based on the courses taken during the last two academic years.

Graduate record examination

Graduate Record Examination (GRE) is not required.

More detailed admission information for Ph.D. degree programs can be found at this site.

Course Requirements

The courses that can be applied should be relevant to the current Ph.D. program. Thus, course and curriculum requirements are as follows:

- Of the 24 to 30 hours of course work credit hours beyond the master's degree approved by the supervisory committee, 15 credit hours should be at the 800-level or above, in addition to doctoral research credit hours.
- For course work beyond the master's degree, no more than 6 credit hours of 500-level courses are permitted in a doctoral program. No 500-level course taken in the student's major field of study, i.e., Department, may appear in the program of study.
- Not more than 6 hours of problems or other individualized courses should ordinarily appear on the program of study for the doctoral program.
- For students who bypass the master's degree, the program of study must include at least 15 credit hours at the 800-level or above, in addition to doctoral research credit hours. No more than 12 credit hours of 500 level courses are permitted in a doctoral program and they must come from outside the student's major field of study (i.e., Department).

Required Courses

Note: Each Ph.D. degree program must include 3 credit hours of Graduate Seminar (HORT 951).

- HORT 951 - Horticulture Graduate Seminar **Credits: 1**

Research

30 - 36 credit hours of research are required. The number of research credits should accurately reflect the emphasis on research inherent in the Ph.D. degree.

- HORT 999 - Research in Horticulture, PhD **Credits: 1-18**

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Graduate Certificate

Advanced Horticulture Graduate Certificate

Contact: Candice Shoemaker
E-mail: cshoemak@ksu.edu

This certificate is offered through the Horticulture and Natural Resources graduate program.

Students, upon consultation with their advisors, will select a minimum of 12-credits of coursework from graduate courses available through Hort AG*IDEA and Kansas State University. At least one course with a basis in horticultural crop physiology should be included in the Plan of Work for the certificate.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Horticulture and Natural Resources at Kansas State University.

Course Requirements

Horticultural Crop Physiology (3 credits minimum)

- HORT 706 - Advanced Culture of Golf and Sports Turf **Credits: 3**
- HORT 800 - Horticultural Physiology **Credits: 3**
- HORT 815 - Plant Nutrition and Nutrient Management **Credits: 3**
- AGRON 820 - Plant Water Relations **Credits: 3**
- HORT 960 - Environmental Plant Stress **Credits: 3**

Cultural and Business Practices (up to 9 credit hours)

- HORT 600 - Herbaceous Landscape Plant Production **Credits: 3**
- HORT 625 - Floral Crops Production and Handling **Credits: 2**
- HORT 630 - General Viticulture **Credits: 3**
- HORT 695 - Introduction to Permaculture **Credits: 3**
- HORT 710 - Plant Cell, Tissue and Organ Culture. **Credits: 3**
- HORT 715 - Advanced Interiorscaping **Credits: 3**
- HORT 720 - Environmental Nursery Production **Credits: 3**
- HORT 760 - Business Management for Horticultural Enterprises **Credits: 3**
- HORT 775 - Plant Breeding Methods in Horticulture **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Urban Food Systems Graduate Certificate

This 12-credit interdisciplinary graduate certificate in Urban Food Systems (UFS) is designed for graduate students and professionals that wish to demonstrate proficiency in UFS. Through the 6-credits of core courses and 6-credits of electives students will learn:

- a systems perspective to understand the urban environment and its cultural, political, environmental, and economic roles in urban food systems
- the inter-relationships within urban food systems, specifically among diet, food production, the environment, climate, and public health
- approaches to urban food crop production
- selected skills (grant writing, fundraising, non-profit management, advocacy, communication, evidence-based decision rules) as a community organizer, educator, or leader in urban food systems.

This program can be completed online and on-campus. Students will interact regularly with each other and leaders in the field.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Current K-State graduate students who want to pursue the certificate should contact the Program Director for guidance on filling out a plan for completing the certificate.

Certificate only students must apply to the certificate program through the online graduate admissions application process. When asked to **Select a Degree Program** choose "Graduate Certificate" for degree and "Urban Food Systems – Graduate Certificate" for program. The program will be listed under the Interdisciplinary tab. Once your application is set up, you will be asked to provide the following documents that you will upload to the online application and pay the application fee:

- **Statement of Purpose** (1-2 pages) describing your interest in urban food systems, your objectives in pursuing this certificate, and plans for completion of the program requirements. The Statement of Purpose is an important component of your application.
- Copies of all **transcripts**. If accepted, you will need to provide "official" transcripts to the Graduate School.
- **One letter of reference** from your supervisor, advisor, or a professor that can address your ability to succeed in Graduate School. You will provide the name and e-mail address and the online system will email that person and provide them with a link.

To qualify, students must have:

- A bachelor's degree from an accredited institution
- GPA of 3.0 or higher in the final two years of undergraduate study or approximately the last 60 credit hours
- Computer proficiency sufficient to complete the online course work
- Test of English as a Foreign Language (TOEFL) scores for students whose native language is not English. Acceptable TOEFL score is 550 (paper-based test), or 79 (IBT-internet-based test).

Students not meeting the requirements above may be admitted on a provisional basis at the discretion of the certificate faculty if the student has demonstrated adequate preparation in this or an equivalent field and has successfully completed projects of equivalent difficulty.

Graduation Requirements

The Graduate Certificate in Urban Food Systems consists of 12 credit hours with 6 credits of core courses and 6 credits of elective courses.

Course Requirements

Required Courses

6 credit hours

- UFS 791 - Urban Agriculture **Credits: 2**
- UFS 794 - Urban Food Systems **Credits: 2**
- UFS 796 - Professional Development in Urban Food Systems **Credits: 1**
- UFS 798 - Urban Food Systems Field Experience **Credits: 1**

Elective Courses

6 credit hours. Select from the following:

Plant and Agricultural Sciences

- AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6
- AGECE 710 - Comparative Food and Agriculture Systems Credits: 3
- AGECE 810 - Price, Income and Trade Policies in Agriculture Credits: 3
- AGECE 815 - International Agricultural Development Credits: 3
- AGECE 825 - Natural Resource Policy Credits: 3
- AGECE 890 - Advanced Food and Agribusiness Management Credits: 3
- AGRON 605 - Soil and Environmental Chemistry Credits: 3
- AGRON 615 - Topics in Agronomy Credits: 1-3
- AGRON 635 - Soil and Water Conservation Credits: 3
- CIS 590 - Special Topics in Computer Science Credits: 1-4
- CIS 890 - Special Topics in Computer Science Credits: 2-4
- ENTOM 612 - Insect Pest Diagnosis Credits: 2
- ENTOM 799 - Problems in Entomology Credits: 1-18
- HORT 725 - Postharvest Technology and Physiology of Horticultural Crops Credits: 3
- HORT 780 - Health-Promoting Phytochemicals: Fruits and Vegetables Credits: 2
- HORT 790 - Sustainable Agriculture Credits: 2
- HORT 793 - Farm to Fork Produce Safety Credits: 2
- HORT 795 - Urban Agriculture Study Tour Credits: 1
- PLPTH 765 - Integrated Plant Disease Management Credits: 2
- UFS 640 - Topics in Urban Food Systems Credits: 1-3

Leadership and Management

- AGCOM 845 - Approaches to Public/Community Engagement Credits: 3 or
- COMM 845 - Approaches to Public/Community Engagement Credits: 3 or
- LEAD 845 - Approaches to Public/Community Engagement Credits: 3
- CDPLN 633 - Grantwriting Credits: 3
- CDPLN 700 - Foundations of Community Development Credits: 3
- CDPLN 704 - Community Leadership and Capacity Building Credits: 3
- CDPLN 713 - Nonprofit Management Credits: 3
- CDPLN 720 - Community and Regional Economic Analysis Credits: 3
- DMP 815 - Multidisciplinary Thought and Presentation Credits: 3
- LEAD 701 - Foundations of Leadership Credits: 3
- POLSC 740 - Nonprofit Financial Management Credits: 3

Sociology, Economics, Health

- CDPLN 701 - Special Studies in Community Development Credits: 1-3
- CDPLN 711 - Immigrants in Communities Credits: 3
- CDPLN 712 - Sustainable Communities Credits: 3
- FDSCI 630 - Food Science Problems Credits: 0-6
- FDSCI 730 - A Multidisciplinary Overview of Food Safety and Security Credits: 2
- FDSCI 731 - Food Protection and Defense--Essential Concepts Credits: 2
- FNDH 600 - Public Health Nutrition Credits: 3
- FNDH 700 - Global Health and Nutrition Credits: 3
- SENS 701 - Sensory Analysis Credits: 3

- FNDH 820 - Functional Foods for Chronic Disease Prevention **Credits: 3**
- SENS 833 - Descriptive Sensory Analysis: Methods **Credits: 1**
- SENS 841 - Consumer Research - Fundamentals **Credits: 1**
- SENS 843 - Consumer Research - Qualitative **Credits: 1**
- SENS 848 - Consumer Research – Quantitative **Credits: 1**
- SENS 851 - Sensory Analysis Applications of Statistics **Credits: 2**
- FNDH 862 - Maternal and Child Nutrition **Credits: 3**
- LAR 741 - Problems in Landscape Architecture **Credits: 1-18** (for LAR 298 - Ethics and Environmental Dilemmas)
- MPH 818 - Social and Behavioral Bases of Public Health **Credits: 3**
- PLAN 718 - Principles and Strategies of Community Change **Credits: 3**
- PLAN 720 - Infrastructure and Plan Implementation **Credits: 3**
- PLAN 801 - Knowledge Methods **Credits: 3**
- PLAN 812 - Planning Theory & Law **Credits: 3**
- SOCIO 831 - Sociology of Agriculture **Credits: 3**
- SOCIO 832 - Sociology of Community **Credits: 3**
- SOCIO 835 - Environment and Society **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Master of Science

Horticulture and Natural Resources (MS)

The Horticulture and Natural Resources graduate program offers a Master of Science degree program in diverse interdisciplinary horticultural areas and in Natural Resources disciplines related to Park Management and Conservation and Wildlife and Outdoor Enterprise Management. Graduate students are expected to excel in research, teaching, extension activities and develop professionally. Independent and original research is an important part of the graduate program and forms a basis for a graduate thesis. Research can be conducted within the department or in other cooperating departments.

Admission Requirements

- Completion of a bachelor's degree from an accredited 4-year institution according to the following guidelines:
 - Horticulture: a bachelor's degree in horticulture, botany, biology or related agricultural science.
 - Park Management and Conservation: a bachelor's degree in the life sciences or natural resources is preferred but not required.
 - Wildlife and Outdoor Enterprise Management: a bachelor's degree in biology, environmental science, ecology, or related field.
- GPA of 3.0 or better on a 4.0 scale, based on the courses taken during the last two academic years.
- Graduate Record Examination (GRE) is not required.

More detailed admission information for M.S. degree programs can be found at this site.

Course Requirements

The M.S. requires at least 30 credit hours beyond the bachelor's degree. Master's students should earn a significant majority of their credit hours in courses numbered 700 or above. Therefore, of the 30 credit hours normally required for the master's program

of study at least 18 hours should be at the 700 level and above, including the thesis/research and the report/problems hours required by the thesis and report options.

Required Courses

The M.S. requires at least 30 credit hours beyond the bachelor's degree. Master's students should earn a significant majority of their credit hours in courses numbered 700 or above. Therefore, of the 30 credit hours normally required for the master's program of study at least 18 hours should be at the 700 level and above, including the thesis/research and the report/problems hours required by the thesis and report options. Course and research credit requirements are as follows:

- HORT 951 - Horticulture Graduate Seminar **Credits:** 1 (2) †
- Research Methods and/or Scientific Writing **Credits:** 3
- Statistics courses at 700-level or above **Credits:** 3
- Other courses to be selected with major advisor and committee

More detailed course work information for M.S. degree programs can be found at this site.

†Note: Each M.S. degree program must include 2 credit hours of Graduate Seminar (HORT 951).

Thesis Option Courses

- HORT 899 - Research-MS **Credits:** 1-18 (6-8)

Report Option Courses

- HORT 898 - Master's Report **Credits:** 1-18 (2)

Total Hours Required for Master's: 30

Horticulture and Natural Resources - Urban Food Systems (MS)

This specialization focuses on sustainable agriculture, food systems project management, grant writing, horticultural science, and safe food production in an urban environment. Students will gain a systems-level understanding of urban food systems and the cultural, political environmental, and economic roles within them.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

- 700 level or above Statistics **Credits:** 3

Elective Courses

9 credit hours

- HORT 791 - Urban Agriculture **Credits: 2**
- HORT 792 - Urban Food Production Practicum **Credits: 1**
- HORT 794 - Urban Food Systems **Credits: 2**
- HORT 796 - Professional Development in Urban Food Systems **Credits: 0-1**
Specialization Elective, must choose at least 3 credits from the following:
- HORT 725 - Postharvest Technology and Physiology of Horticultural Crops **Credits: 3**
- HORT 790 - Sustainable Agriculture **Credits: 2**
- HORT 793 - Farm to Fork Produce Safety **Credits: 2**
- HORT 795 - Urban Agriculture Study Tour **Credits: 1**

Thesis Option Courses

- HORT 899 - Research-MS **Credits: 1-18 (6)**
- HORT 951 - Horticulture Graduate Seminar **Credits: 1**
Research Methods and/or Scientific Writing **Credits / Units: 3**
Additional courses - to be determined by Supervisory Committee **Credits / Units: 7**

Report Option Courses

- Professional/Scientific Writing
Credits / Units: 3
- HORT 898 - Master's Report **Credits: 1-18 (2)**
- Additional courses - to be determined by Supervisory Committee
Credits / Units: 13

Total Hours Required for Master's: 30

Plant Pathology

Megan Kennelly, Department Head and Director of Graduate Studies

4024 Throckmorton Hall
1712 Claflin Rd
785-532-6176
Fax: 785-532-5692
plantpath@ksu.edu
www.plantpath.ksu.edu

Description and Mission

Our mission is to understand and improve plant health. Plant pathology is the study of plant diseases, their cause, effects, biology, ecology, and control. The discipline is closely integrated with the other biological sciences, and we have unique strengths in basic and applied research. Our work has state, regional, national, and international impact.

Departmental Research and Teaching Emphasis

Our department offers broad training across all facets of plant pathology. Coursework and research include:

- bacteria, fungi, nematodes, and viruses
- bio-informatics, biological control, biotechnology (cell and tissue culture, plant transformation and regeneration)
- disease diagnosis and management for major field crops in Kansas: wheat, corn, sorghum, alfalfa, and soybeans, horticultural plants (trees, turf, vegetables, fruits, ornamentals)
- disease physiology
- ecology and epidemiology
- host and microbial genetics and genetics
- modeling/statistics
- molecular genetics
- molecular plant-microbe interactions
- biosecurity

Our Department administers the campus-wide Integrated Genomics Facility; the 9-state, Great Plains Diagnostic Network; the Wheat Genetics Resource Center; and the Fungal Genetics Stock Center.

Professional Development

Along with providing technical training, we offer professional development in science communication, networking, and leadership:

- Weekly departmental seminar series exposes students to visiting scholars from within KSU and across the globe
- Student proposal seminars and professional communications courses offer training in science communication
- Graduate student club activities provide leadership development opportunities
- Graduate students develop mentoring skills by mentoring undergraduate researchers
- Graduate students gain instructional experience by serving as teaching assistants

Personnel

Our Department currently has about 30 faculty members onsite, 25-35 graduate students, about 25 post-doctoral fellows, and visiting scientists, and about 20 technical assistants, who come from many different areas of the world. We are a diverse and inclusive Department with a global climate in which ideas thrive and people excel.

Facilities and Equipment

Our Department is housed in the Throckmorton Plant Sciences Center on the KSU campus. The Department has 39,000 sq. ft. of a modern office, laboratory, and classroom space. The building is connected to 100,000 sq. ft. (2.3 acres, or about 1 hectare) of greenhouse space. Faculty have individual research labs, all well-equipped for the types of research they do. We share equipment, materials, and ideas across the Department.

Degree Options

The department offers a full range of courses leading to the M.S. and Ph.D. degrees on the following topics:

- plant pathogenic bacteria, fungi, nematodes, and viruses
- fungal genetics

- plant genetics
- disease control, diagnosis, ecology, epidemiology, and physiology
- host plant resistance to disease and abiotic stress
- biotechnology
- genomic applications
- bioinformatics
- plant molecular biology
- student proposal seminar
- professional communications
- special problems and topics for individualized study

A detailed list of courses is provided below along with specific curriculum requirements for the M.S. and Ph.D. programs.

Many of our faculty also participate in the interdepartmental program in Genetics, described elsewhere, which leads to a degree in Genetics.

Admission

Please see our departmental page for current admission deadlines and other details:

<https://www.plantpath.k-state.edu/graduate/application-information/index.html>

General requirements

Applicants are accepted into the program only if they are accepted by a specific faculty member who will serve as the Major Professor.

- Applicants must have a bachelor's degree, or be on schedule to complete a bachelor's degree prior to enrolling at KSU
- Applicants should have coursework or training in most of the following areas:
 - Biological sciences (such as botany, biology, plant science, plant pathology, entomology, mycology, microbiology, genetics, agronomy, horticulture)
 - Chemistry (such as inorganic, organic, biochemistry)
 - Mathematics
 - Physics
 - Statistics
- Relevant work experience or other professional training will also be considered
- Overall grade point average should be at least a B (3.0 on 4.0 point scale)
 - Grades in background courses in biology, math, chemistry, etc., should be A or B
- We do not require a GRE score
- International students whose native language is not English must provide evidence of English proficiency (see our application website for details)

Applications are completed online at <http://www.k-state.edu/grad/application/index.html>

Financial Assistance

Financial support may be available to qualified students. Current graduate research assistantship (GRA) information is on our application information page:

<https://www.plantpath.k-state.edu/graduate/application-information/index.html>

All applications are evaluated for available assistantships. Students may also be eligible to apply for fellowships from private and federal sources.

Doctor of Philosophy

Plant Pathology (PHD)

The Plant Pathology department offers a full range of courses leading to the Ph.D. degree. These cover diseases caused by bacteria, fungi, nematodes, and viruses; bacterial and fungal genetics; disease control, diagnosis, ecology, epidemiology, and physiology; host plant resistance to disease; plant pathology methods; plant tissue culture and regeneration; plant cytogenetics; and student seminar, special problems and topics, and research.

Admission Requirements

Ph.D. students are required to take at least 90 credit hours beyond the B.S. degree; graduate committees normally require at least 24 credit hours of formal class work at KSU past the M.S. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Required Courses

Three of the following (or their equivalents)

- PLPTH 730 - Plant Nematology **Credits: 3**
- PLPTH 835 - Plant Virology **Credits: 3**
- PLPTH 840 - Plant Pathogenic Bacteria **Credits: 2**
- PLPTH 845 - Plant Pathogenic Fungi **Credits: 3**

At least one of the following:

- PLPTH 880 - Plant Molecular Biology **Credits: 3**
- PLPTH 910 - Molecular Plant-Microbe Interactions **Credits: 3**

At least one of the following:

- PLPTH 820 - Population Genetics **Credits: 3**
- PLPTH 905 - Ecology and Epidemiology of Plant Pathogens **Credits: 3**

At least one of the following:

- EDCI 943 - Principles of College Teaching **Credits: 3**
- PLPTH 922 - Teaching Practicum in Plant Pathology **Credits: 1-2**

At least one of the following

- PLPTH 820 - Population Genetics **Credits: 3**
- PLPTH 905 - Ecology and Epidemiology of Plant Pathogens **Credits: 3**

At least one of the following

- EDCI 943 - Principles of College Teaching **Credits: 3**
- PLPTH 922 - Teaching Practicum in Plant Pathology **Credits: 1-2**

Alternate teaching experience approved by the student's graduate committee.

Seminar

PLPTH 870 Seminar must be taken for a total of 3 credit hours. One credit hour of PLPTH 870 must be used for a proposal seminar within the first 2 years of entering the graduate program. One credit hour of PLPTH 870 must be used for the thesis defense seminar. At least one hour of seminar must be in an area not related to the thesis work unless approved by the Seminar Committee.

- PLPTH 870 - Thesis/ Dissertation Proposal Seminar **Credits: 1**

Electives

At least four additional credit hours of electives must be taken in Plant Pathology.

Research

The Graduate School requires 30 credit hours minimum and notes that the number of research credits should accurately reflect the emphasis on research inherent in the Ph.D. degree.

- PLPTH 999 - Research in Plant Pathology for the PhD Degree **Credits: 1-18**

Free electives

39-40 credit hours

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Genetics, Genomics and Biotechnology Graduate Certificate

Contact: Richard Todd
E-mail: rbtodd@ksu.edu

The graduate certificate requires a minimum of 15 credit hours. To pursue the Genetics, Genomics and Biotechnology graduate certificate the student must file an application for admission with the program coordinator. A genetics course is a pre-requisite for entry into the program.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

- PLPTH 812 - Introduction to Integrative Genome Analysis **Credits: 3**
- AGRON 610 - Biotechnology **Credits: 3**
- OR
- PLPTH 610 - Biotechnology **Credits: 3**

Laboratory Course (2-3 credit hours)*

*Students whose graduate research involves use of biotechnology laboratory techniques will not be required to complete a laboratory course. An exemption from this requirement will be granted by the Program Director if the student demonstrates use of the range of covered techniques by coauthor status on a publication (either submitted or published), or first author status on an abstract for a presentation at a national meeting, and/or direct confirmation of the contribution by the student's advisor. In this case, elective courses may be substituted for the laboratory course to reach the 15 hours of minimum credits required.

- BIOL 676 - Molecular Genetics Laboratory **Credits: 3**
- OR
- BIOCH 766 - Recombinant DNA Laboratory I **Credits: 1**
- AND
- BIOCH 767 - Recombinant DNA Laboratory II **Credits: 1**

Elective Courses

6-7 credit hours

- AGRON 630 - Crop Improvement and Biotechnology **Credits: 3**
- AGRON 732 - Introduction to Plant Resistance to Pests **Credits: 2**
- OR
- PLPTH 732 - Introduction to Plant Resistance to Pests **Credits: 2**
- AGRON 680 - Plant Genetics **Credits: 3**
- AGRON 860 - Applied Plant Breeding **Credits: 3**
- AGRON 970 - Advanced Plant Breeding I **Credits: 3**
- AGRON 980 - Genomic Analysis for Crop Improvement **Credits: 3**
- ASI 600 - Applied Animal Biotechnology **Credits: 3**
- ASI 749 - Advanced Animal Breeding **Credits: 3**
- ASI 831 - Molecular Reproductive Endocrinology **Credits: 1**
- BIOCH 755 - Biochemistry I **Credits: 3**
- BIOCH 765 - Biochemistry II **Credits: 3**
- BIOL 609 - Cellular and Molecular Biology of Human Diseases **Credits: 3**
- BIOL 640 - Population Biology **Credits: 3**
- BIOL 670 - Immunology **Credits: 3**
- BIOL 671 - Immunology Lab **Credits: 2**
- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**
- BIOL 730 - General Virology **Credits: 3**
- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**
- OR

- CIS 734 - Introduction to Genomics and Bioinformatics Credits: 4
- BIOL 840 - Molecular and Cellular Immunology Credits: 3
- BIOL 860 - Modern Molecular Approaches Credits: 3
- BIOL 886 - Confocal, Fluorescence and Light Microscopy Credits: 3
- BIOL 888 - Electron Microscopy Techniques Credits: 3
- ENTOM 860 - Insect Genetics Credits: 3
- HORT 710 - Plant Cell, Tissue and Organ Culture. Credits: 3
- HORT 910 - Advances in Plant Cell Culture Credits: 2
- PLPTH 813 - Bioinformatics Applications Credits: 3
- PLPTH 755 - Plant Resistance to Diseases Credits: 2
- PLPTH 885 - Genomic Technologies Workshop Credits: 2
- PLPTH 820 - Population Genetics Credits: 3
- PLPTH 835 - Plant Virology Credits: 3
- PLPTH 880 - Plant Molecular Biology Credits: 3
- PLPTH 910 - Molecular Plant-Microbe Interactions Credits: 3
- PLPTH 915 - Advanced Plant Genetics Credits: 3
- PLPTH 916 - Cytogenetics Laboratory Credits: 1
- PLPTH 927 - Fungal Genetics Credits: 3

Total Hours Required for Graduate Certificate: 15

Master of Science

Plant Pathology (MS)

The Plant Pathology graduate program offers a full range of courses leading to the M.S. degree. These cover diseases caused by bacteria, fungi, nematodes, and viruses; bacterial and fungal genetics; disease control, diagnosis, ecology, epidemiology, and physiology; host plant resistance to disease; plant pathology methods; plant tissue culture and regeneration; plant cytogenetics; and student seminar, special problems and topics, and research.

Course Requirements

Candidates may choose to complete the thesis option or the report option.

Most students in our Department choose the thesis option and sign up for PLPTH 899. Students who do not desire the intensive research experience may choose to do a report instead, and will sign up for PLPTH 898. Because research experience is considered a prelude for a Ph.D., the report option is sometimes considered a "terminal degree;" i.e., students who complete the report option are much less likely to be accepted into a Ph.D. program. It is recommended only for those students who do not intend to later pursue a Ph.D.

Students who start in the research option and have taken PLPTH 899 for credit, and then switch to a report option, sign up for 2 credits of PLPTH 898 and leave the PLPTH 899 credit on their transcripts; however, the PLPTH 899 credit does not count toward the 30 credit-hour minimum requirement for the M.S. degree.

Required Courses

At least two of the following (or their equivalents)

- PLPTH 730 - Plant Nematology Credits: 3
- PLPTH 835 - Plant Virology Credits: 3
- PLPTH 840 - Plant Pathogenic Bacteria Credits: 2
- PLPTH 845 - Plant Pathogenic Fungi Credits: 3

At least one of the following

- PLPTH 610 - Biotechnology Credits: 3
- PLPTH 880 - Plant Molecular Biology Credits: 3
- PLPTH 910 - Molecular Plant-Microbe Interactions Credits: 3

At least one of the following

- AGRON 732 - Introduction to Plant Resistance to Pests Credits: 2

OR

- PLPTH 732 - Introduction to Plant Resistance to Pests Credits: 2

AND

- PLPTH 755 - Plant Resistance to Diseases Credits: 2
- PLPTH 820 - Population Genetics Credits: 3
- PLPTH 905 - Ecology and Epidemiology of Plant Pathogens Credits: 3

One credit hour of PLPTH 870 Thesis/Dissertation Proposal Seminar must be used for a proposal seminar within the first three semesters of enrollment and a noncredit, public seminar and oral defense is required prior to completion of the graduate program.

- PLPTH 870 - Thesis/ Dissertation Proposal Seminar Credits: 1

Thesis Option Courses

PLPTH 899 Research in Plant Pathology for the M.S. degree (6 credit hours minimum, 8 credit hours maximum; students can take more than 8 credit hours, but only 8 credit hours will count toward the degree and only 8 credit hours can be listed on the Program of Study).

- PLPTH 899 - Research in Plant Pathology for the MS Degree Credits: 1-18

Report Option Courses

2 credit hours

- PLPTH 898 - Master's Report Credits: 1-2

Total Hours Required for Master's: 30

College of Architecture, Planning and Design

Michael McClure, Dean

Katie Kingery-Page, Associate Dean

1127 Regnier Hall

785-532-5047

Fax: 785-532-6722

Email: apdesign@k-state.edu

The College of Architecture, Planning, and Design offers accredited professional degree programs in architecture, interior architecture and industrial design, landscape architecture, and regional and community planning.

The college consists of three academic departments: architecture, interior architecture and industrial design, and landscape architecture and regional and community planning.

The curriculum in architecture is accredited by the National Architectural Accrediting Board (NAAB). The interior architecture curriculum is accredited by the Council for Interior Design Accreditation (CIDA), and approved by the National Association of Schools of Art and Design (NASAD). The industrial design curriculum is approved by the National Association of Schools of Art and Design (NASAD). The landscape architecture curriculum is accredited by the Landscape Architectural Accreditation Board (LAAB). The planning curriculum is accredited by the American Institute of Certified Planners (AICP) in cooperation with the Association of Collegiate Schools of Planning (ACSP).

APDesign offers both professional and post-professional degrees with several points of entry to the accredited programs including accredited 5-year non-baccalaureate Master's degrees designed for high school graduates and transfer students, accredited 2-3+ year post-baccalaureate Master's degrees designed for students who hold a bachelor's degree in any field, non-accredited 2-year post-professional degrees for students who hold accredited degrees in one of the design/planning professions, as well as an interdisciplinary Ph.D. designed for students who have either earned a master's or a bachelor's degree coupled with relevant professional, research or creative work experience. Learn more about our application process and admission requirements for all degrees offered in APDesign.

The accredited degree programs will lead to the respective professional licensing or certification in the states that require such exams.

Click on any of the following links for information:

- [Student academic creations](#)
- [Study Abroad](#)
- [Internship](#)
- [Kansas City Design Center \(KCDC\)](#)

Student academic creations

All programs involve extensive project work. Students are advised to budget sufficient funds to cover the cost of equipment, materials, and supplies. Material costs will be higher than those published for non-studio curricula.

Student academic creations are subject to Kansas State University and Board of Regents intellectual property policies. The Regents policy states:

"The ownership of student works submitted in fulfillment of academic requirements shall be with the creator(s). The student, by enrolling in the institution, gives the institution a non-exclusive royalty-free license to mark on, modify, retain the work as may be required by the process of instruction, or otherwise handle the work as set out in the institution's intellectual property policy or in the course syllabus. The institution shall not have the right to use work in any other manner without the written consent of the creator(s)." "Otherwise handle," as referenced in this policy, includes display of student work in various media and use for accreditation purposes.

K-State's intellectual property policy.

Study Abroad

Students can earn academic credit by studying abroad in Italy, Australia, Denmark, England, Germany or the Czech Republic. Specific information is available from the Director of International Programs. Requirements vary among the departments.

Internship

Internships are available with private practitioners, corporations, and government agencies. Students earn academic credit and a salary while on internship. Specific requirements vary among the departments.

The opportunity to study in the heart of downtown Kansas City, at a nationally recognized, nonprofit-partnership comprised of local civic leaders, professional designers and planners and students who are actively seeking urban design and planning solutions for this major metropolitan area. For additional information go to <http://www.kcdesigncenter.org/>

Extracurricular activities

The college offers opportunities for students to become involved in student government, student chapters of professional societies, college ambassadors, peer educators, Open House, and the student journal, *OZ*.

Doctor of Philosophy

Environmental Design and Planning (PHD)

The Environmental Design and Planning Ph.D. at the College of Architecture, Planning and Design is an interdisciplinary research-based degree program, with the aim of contributing to a more livable and ecologically-sustainable society. Our doctoral students are members of the College at-large, rather than a particular department, allowing students to draw from the sizeable and wide-ranging knowledge of faculty from the university and all three of our departments:

- Architecture,
- Interior Architecture and Industrial Design, and
- Landscape Architecture and Regional & Community Planning.

This program is designed to prepare graduates to teach at the graduate level and/or conduct research. In addition to teaching, our graduates also are well-equipped to undertake research to inform design and/or planning for governmental, environmental, and planning agencies; developers; professional design firms; and international corporations that focus on environmental stewardship.

Admission Requirements

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Major Professor/Advisor. One member of the core Ph.D. faculty must accept mentorship responsibility for any student prior to their admittance to the doctoral program. Applicants are strongly encouraged to be in contact with Ph.D. faculty members with whom they share interests, and if possible, obtain a commitment from a faculty member to support their application.

Application Review Committee. Even with faculty commitment, the application must be reviewed and approved by the PhD committee before an offer of acceptance can be made.

Course Requirements

Sample program of study

First semester

- Research
- Research tools course

- Organize advisory committee for research tool and course of study
- ENVD 900 - Conceptual Approaches to Design and Planning **Credits: 3**

Second semester

- Research tools course
- College 800-level cross-disciplinary seminar
- Organize doctoral committee
- Submit doctoral Program of Study to the Graduate School
- ENVD 901 - Research Methods in Design and Planning **Credits: 3**

Third semester

- 700- or 800-level elective
- 700- or 800-level elective
- 700- or 800-level elective
- *Write first draft of dissertation proposal*

Fourth semester

- 700- or 800-level elective
- Independent study (with major professor)
- *Preliminary examination (early in semester)*
- *Defend dissertation proposal (late in semester)*

Fifth semester

- ENVD 999 - Dissertation Research **Credits: 0-18**

Sixth semester

- *Defend dissertation*
- ENVD 999 - Dissertation Research **Credits: 0-18**

Elective courses:

Design

- ARCH 765 - Advanced Problems in Architecture **Credits: 1-18**
- ARCH 801 - Topics in History of the Designed Environment **Credits: 3**
- ARCH 811 - Topics in Architectural Design Methods **Credits: 3**
- ARCH 815 - Topics in Architecture **Credits: 3**
- ARCH 830 - Advanced Architectural Studies **Credits: 1-18**
- ARCH 835 - Topics in Building Construction Systems in Architecture **Credits: 1-4**
- ARCH 852 - Topics in Structural Systems in Architecture II **Credits: 3**

- ARCH 853 - Professional Practice: Professional Responsibility Credits: 1
- IARC 625 - Lighting Credits: 3
- IARC 710 - Advanced 3-D Computer Modeling Credits: 3
- IARC 760 - IARC Seminar Credits: 0-18
- IARC 802 - Design Workshop II Credits: 3
- IARC 803 - Design Workshop II Studio Credits: 1
- IAID 814 - Furniture Design III Credits: 4
- IAPD 821 - Advanced IAPD Design Studio Credits: 4
- IARC 822 - Advanced Product Design Studio Credits: 6
- IARC 823 - Advanced Interior Architecture Design Studio Credits: 6
- IAID 824 - Advanced Furniture Design Studio Credits: 6
- IARC 830 - Problems in IARC Credits: 0-18
- IAID 891 - Contemporary Design Seminar Credits: 3
- LAR 635 - Golf Course Planning and Design Credits: 1-4
- LAR 647 - Design Implementation III Credits: 5
- LAR 740 - Advanced Studio Credits: 5
- LAR 741 - Problems in Landscape Architecture Credits: 1-18

Planning

- LAR 646 - Community Engagement Studio Credits: 5
- LAR 740 - Advanced Studio Credits: 5
- LAR 704 - Environmental Landscape Planning and Design Credits: 3
- PLAN 655 - Land Development Planning Credits: 3
- PLAN 741 - Special Studies in Planning Credits: 1-18
- PLAN 753 - Planning Law Credits: 3
- PLAN 765 - Growth Management Credits: 3
- PLAN 801 - Knowledge Methods Credits: 3
- PLAN 802 - Planning Methods II Credits: 3
- PLAN 815 - Planning Theory, Ethics and Practice Credits: 3
- PLAN 836 - Plan Making Credits: 5
- PLAN 880 - Topics in Planning Credits: 1-18

Sustainability

- ARCH 816 - Topics in Environmental Systems in Architecture Credits: 3
- LAR 647 - Design Implementation III Credits: 5
- LAR 704 - Environmental Landscape Planning and Design Credits: 3
- LAR 720 - Public Lands and Natural Resources Law Credits: 3
- PLAN 765 - Growth Management Credits: 3

Place making

- ARCH 704 - Topics in Environment and Behavior Credits: 3
- ARCH 803 - Environmental Aesthetics Credits: 3
- ARCH 820 - Environment and Behavior Credits: 3

- LAR 646 - Community Engagement Studio Credits: 5
- LAR 647 - Design Implementation III Credits: 5
- LAR 740 - Advanced Studio Credits: 5
- LAR 750 - Advanced Seminar Credits: 3
- PLAN 650 - Housing and Development Programs Credits: 3
- PLAN 660 - Community Development Planning Credits: 3
- PLAN 661 - Community Development Workshop Credits: 3
- PLAN 740 - Small Community and Rural Area Planning Credits: 3

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Architecture

Matthew Knox, Department Head

R. Todd Gabbard, Associate Head and Graduate Program Director

1088 Seaton Hall

785-532-5953

Fax: 785-532-1086

architecture@ksu.edu

www.apdesign.kstate.edu/arch/

Academic Advising

<http://apdesign.k-state.edu/current-students/advising.html>

Overview

The Department of Architecture, situated within the interdisciplinary College of Architecture, Planning and Design, offers two degrees at the graduate level: an accredited, professional Master of Architecture and a research based post-professional Master of Science in Architecture.

Master of Architecture (M.ARCH)

The NAAB-accredited Master of Architecture program is based firmly upon the complementary foundations of general and architectural education. We emphasize mastery of the knowledge, skills and understandings essential to the artful creation of buildings, spaces and places. The faculty seeks to assure that our students receive extensive exposure to social, political, economic and technological perspectives that will aid them in functioning as effective leaders in a rapidly changing global context.

In emphasizing the architect's role as a designer of environments that responsibly address individual and societal needs, the professional Master of Architecture curriculum includes a sequence of design studios providing holistic examination of environmental design issues. Courses in history, theory, human behavior, construction, structural and environmental systems,

planning, programming, and professional practice compliment students' work in the carefully orchestrated series of design studios.

The M.ARCH degree has two entry points. Students with little or no college experience should apply for the five year plus Non-Baccalaureate Master of Architecture. Students who currently have a Bachelor's Degree, regardless of field of study, should apply for the Post-Baccalaureate Master of Architecture program.

Master of Science in Architecture (M.S.ARCH)

The M.S. Architecture program is for students with a scholarly interest in the field of architecture. The M.S.ARCH allows students to critically explore a wide range of design-related issues in several areas of emphasis: Design Theory, and Ecological and Sustainable Design. The 30 credit graduate degree, normally completed in one to two years, is comprised of seminars and faculty-guided individual study, and leads to a capstone project or thesis.

Special Activities and Programs

Short, carefully structured visits to cities in Kansas and nearby states during the first year of study introduce students to techniques of urban and architectural analysis and extend the range of their experience. Longer trips are taken in subsequent years. Second year students travel to Dallas; third year students travel to major cities such as New York, Boston, Chicago, San Francisco, and Seattle. Led by faculty, students visit leading architectural firms, contemporary and historical buildings of importance, and examine critical urban design features. Design studio projects are often located in the city visited, so the trips are also site visits, which provide opportunities for detailed urban analysis.

Fourth-year students have access to extended elective field study opportunities, including the semester-long Architectural Internship program and study abroad programs in Italy, the Czech Republic, Denmark, Germany or other countries. Architectural internship and study abroad students return with renewed purpose and fresh insights to share with fellow students and faculty during their final year in the Master of Architecture program.

Fifth year students have the option of international travel based on the focus of their studio projects. The College also offers a year-long fifth year urban design studio at the Kansas City Design Center in Kansas City, Missouri.

Accreditation and Professional Practice

The completion of the Master of Architecture degree and a professional experience qualify our graduates to sit for the Architectural Registration Examination administered by each American state and territory to candidates who wish to become licensed as architects.

In the United States, most registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a preprofessional undergraduate degree in architecture for admission. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

Kansas State University, College of Architecture Planning and Design, Department of Architecture offers the following NAAB-accredited degree programs:

M. Arch. (139 undergraduate credits + 31 graduate credits)

Next accreditation visit for all programs: 2025

From the 2016 NAAB Conditions for Professional Degree programs in Architecture.

Resources

College of Architecture, Planning and Design resources include the Paul Weigel Library, a professionally staffed branch of the university's main facility. It includes over 44,000 bound volumes and approximately 200 periodical subscriptions as well as audio-visual resources. K-State's Library has subscriptions to a broad range of scholarly databases, including architecture and design-oriented scholarship. Among other facilities supporting instruction and research in the College are a computer laboratory, a photography studio, and an artificial sky. The College has an extensive shop for woodworking, metalwork, and other materials. The shop can accommodate everything from small-scale model building activities to full-scale prototyping. The shop includes CAD/CAM equipment such as a large-bed CNC machine and laser cutters. Faculty from the College's other departments, including planning, landscape, interiors, and industrial design, often offer expert criticism for student projects and help foster a holistic approach to the designed environment. Students in the college enjoy a diverse range of lectures, seminars, exhibits, and guest critics throughout the academic year.

Master of Architecture

Master of Architecture (MARCH) (non-baccalaureate track)

Our department offers a NAAB-accredited 5-year Master's degree in Architecture (M. ARCH), crafted for high school graduates and transfer students entering with no academic training in design. The Master of Architecture program is based firmly upon the complementary foundations of general and architectural education. We emphasize mastery of the knowledge, skills and understandings essential to the artful creation of buildings, spaces and places. The faculty seeks to assure that our students receive extensive exposure to social, political, economic and technological perspectives that will aid them in functioning as effective leaders in a rapidly changing global context.

In emphasizing the architect's role as a designer of environments that responsibly address individual and societal needs, the professional Master of Architecture curriculum includes a sequence of design studios providing holistic examination of environmental design issues. Courses in history, theory, human behavior, construction, structural and environmental systems, planning, programming, and professional practice compliment students' work in the carefully orchestrated series of design studios.

Course Requirements

The coursework only option for this program does not require a culminating experience.

First semester: 17 credit hours

- COMM 106 - Public Speaking I **Credits: 3**
- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**
- ENVD 204 - Studio Seminar **Credits: 1**
- ENVD 250 - History of the Designed Environment I **Credits: 3**
- MATH 100 - College Algebra **Credits: 3**
- General Studies Elective **Credits: 2**

Second semester: 15 credit hours

- ENGL 100 - Expository Writing I **Credits: 3**
- ENVD 202 - Environmental Design Studio II **Credits: 4**

- ENVD 251 - History of the Designed Environment II **Credits: 3**
- PHYS 115 - Descriptive Physics **Credits: 5**

Third semester: 18 credit hours

- ARCH 248 - Fundamentals of Architectural Technology **Credits: 3**
- ARCH 274 - Digital Architecture I **Credits: 1**
- ARCH 302 - Architectural Design Studio I **Credits: 5**
- ARCH 325 - Introduction to Architectural Theory **Credits: 3**
- ENGL 213 - Writing Arguments for Architecture Students **Credits: 3**
- General Studies Elective **Credits: 3**

Fourth semester: 16 credit hours

- ARCH 304 - Architectural Design Studio II **Credits: 5**
- ARCH 347 - Structural Systems in Architecture I **Credits: 4**
- ARCH 252 - History of Contemporary Architecture **Credits: 3**
- ARCH 373 - Digital Architecture II **Credits: 1**
- ARCH 433 - Building Construction Systems in Architecture I **Credits: 3**

Supplemental Study: 6 credit hours

- General Studies Electives **Credits: 6**

Fifth semester: 17 credit hours

- ARCH 374 - Digital Architecture III **Credits: 1**
- ARCH 403 - Architectural Design Studio III **Credits: 5**
- ARCH 413 - Environmental Systems in Architecture I **Credits: 4**
- ARCH 448 - Structural Systems in Architecture II **Credits: 4**
- General Studies Elective **Credits: 3**

Sixth semester: 17 credit hours

- ARCH 404 - Architectural Design Studio IV **Credits: 5**
- ARCH 434 - Building Construction Systems in Architecture II **Credits: 3**
- ARCH 514 - Environmental Systems in Architecture II **Credits: 3**
- LAR 500 - Site Planning and Design **Credits: 3**
- General Studies Elective **Credits: 3**

Seventh semester: 16 credit hours

- ARCH 605 - Architectural Design Studio V **Credits: 5**
- General Studies Elective **Credits: 3**
- Planning Elective **Credits: 5**

- Professional Support Elective **Credits: 3**

Eighth semester: 14 credit hours

- ARCH 606 - Architectural Design Studio VI **Credits: 5**
- Professional Support Electives **Credits: 9**

Ninth semester: 17 credit hours

- ARCH 805 - Comprehensive Design Preparation **Credits: 3**
- ARCH 817 - Architectural Design Studio VII **Credits: 5**
- ARCH 853 - Professional Practice: Professional Responsibility **Credits: 1**
- ARCH 854 - Professional Practice: Office Practices **Credits: 1**
- ARCH 855 - Professional Practice: Discipline-Specific Topics **Credits: 1**
- General Studies Elective **Credits: 3**
- Architecture Seminar **Credits: 3**

Tenth semester: 17 credit hours

- ARCH 818 - Architectural Design Studio VIII **Credits: 5**
- Architecture Seminar **Credits: 6**
- Professional Support Elective **Credits: 3**
- General Studies Elective (Undergraduate Level) **Credits: 3**

Notes

A minimum of twenty-eight (28) general studies elective credits must be in non-architectural studies courses. Courses in addition to any course in communications, history, humanities, social sciences, natural sciences, foreign languages, or mathematics will fulfill this requirement. They may be taken in pursuit of a minor. They may be taken any time prior to or during the Architecture program and may include KSU approved AP, IB, CLEP and transfer credit. A maximum of 3 credits of English Language Program courses and a maximum of 3 credits in recreation courses may be used to fulfill general studies requirements. General studies electives may include KSU approved extracurricular work as allowed by university regulations.

** The M.Arch degree requires twenty-seven (27) hours of professional support (PSE) electives, twelve (12) for undergraduate credit and fifteen (15) for graduate credit. Of the undergraduate credits, at least three (3) hours must be planning elective credits; the other nine (9) are usually fulfilled in the 8th semester as part of the 4th year study options. At least nine (9) hours of the graduate level PSE must be architecture seminars. See the M. Arch Handbook for further details. Students may not count more than three (3) total hours of department approved extracurricular PSE credits (such as Oz, NOMAS, Plot Club etc.) toward graduation. PSE credits correspond to optional studies as listed in the 2014 NAAB Conditions for Accreditation.

*** Students are encouraged to participate in off-campus study in the 4th year of the program. Alternative study options for ARCH 606 include study abroad or attending the Kansas City Design Center. An optional academic internship program is also available. Students interested in participating in one or more of these options should meet with their academic advisor.

Undergraduate Hours: 139

Graduate Hours: 31

Total Hours Required for Master's: 170

Master of Architecture (MARCH) (post-baccalaureate track)

The NAAB accredited Post-Baccalaureate Master of Architecture program is an accelerated, three-year pathway to architect status, designed for those with a Bachelor's degree in any field. This accredited, professional program is well-respected, and our graduates are highly desired by employers across the nation and internationally. The Post-Baccalaureate program requires a minimum of three years of study, including a required summer studio.

A unique program option is the Kansas City Design Center, which offers a year-long interdisciplinary design studio that tackles real-world issues in a growing, thriving metropolitan area.

***Advanced Standing Option for Pre-Professional Degree Holders:**

If you have or will graduate from a 4 year pre-professional architecture degree program offered by a NAAB-Accredited school, you may be eligible for advanced standing. Advanced standing students generally are able to waive the first and second semesters of the Post-Baccalaureate Program. Extremely qualified students may be placed further along in the program.

Course Requirements

The coursework only option for this program does not require a culminating experience.

First semester: 17 credit hours

- ARCH 248 - Fundamentals of Architectural Technology **Credits: 3**
- ARCH 274 - Digital Architecture I **Credits: 1**
- ARCH 325 - Introduction to Architectural Theory **Credits: 3**
- ARCH 401 - Accelerated Architectural Design Studio I **Credits: 5**
- Professional Support Electives **Credits: 5**

Second semester: 16 credit hours

- ARCH 252 - History of Contemporary Architecture **Credits: 3**
- ARCH 347 - Structural Systems in Architecture I **Credits: 4**
- ARCH 373 - Digital Architecture II **Credits: 1**
- ARCH 402 - Accelerated Architectural Design Studio II **Credits: 5**
- ARCH 433 - Building Construction Systems in Architecture I **Credits: 3**

Third semester: 17 credit hours

- ARCH 374 - Digital Architecture III **Credits: 1**
- ARCH 403 - Architectural Design Studio III **Credits: 5**
- ARCH 413 - Environmental Systems in Architecture I **Credits: 4**
- ARCH 448 - Structural Systems in Architecture II **Credits: 4**
- Professional Support Elective **Credits: 3**

Fourth semester: 14 credit hours

- ARCH 404 - Architectural Design Studio IV **Credits: 5**
- ARCH 434 - Building Construction Systems in Architecture II **Credits: 3**
- ARCH 514 - Environmental Systems in Architecture II **Credits: 3**
- LAR 500 - Site Planning and Design **Credits: 3**

Summer semester: 8 credit hours

- ARCH 605 - Architectural Design Studio V **Credits: 5**
- Professional Support Elective* **Credits: 3**

Fifth semester: 17 credit hours

- ARCH 805 - Comprehensive Design Preparation **Credits: 3**
- ARCH 817 - Architectural Design Studio VII **Credits: 5**
- ARCH 853 - Professional Practice: Professional Responsibility **Credits: 1**
- ARCH 854 - Professional Practice: Office Practices **Credits: 1**
- ARCH 855 - Professional Practice: Discipline-Specific Topics **Credits: 1**
- Professional Support Elective* **Credits: 3**
- Architecture Seminar* **Credits: 3**

Sixth semester: 14 credit hours

- ARCH 818 - Architectural Design Studio VIII **Credits: 5**
- Architecture Seminar* **Credits: 6**
- Professional Support Elective* **Credits: 3**

Notes

Undergraduate Hours 72

Graduate Hours 31

Total Degree Requirement 103

Incoming students must meet the minimum requirements of the Graduate School – completion of their undergraduate degree and a 3.0 GPA over the last 60 hours of undergraduate study. International students must meet additional requirements of English proficiency, visa status, etc.

The following courses (or their equivalents) must be completed prior to entry into the post-baccalaureate track: MATH 100, COMM 106, PHYS 113 or PHYS 115, ENGL 200, a studio-based art or design course, and a course in architecture or art history.

*The Post-Baccalaureate degree requires 26 hours of professional support (PSE) electives, 11 for undergraduate credit and 15 for graduate credit. At least 9 hours of the 15 graduate level PSE must be architecture seminars. PSE credits correspond to optional studies as listed in the NAAB Conditions for Accreditation. See the M.Arch Handbook for further details.

Total Hours Required for Master's: 103

Master of Science

Architecture (MS)

The Master of Science in Architecture program at Kansas State University is a post-professional program of study requiring a minimum of 30 semester credit hours for completion of the degree. The program usually requires two years in residence, and is designed to enable students to pursue specialized study in specific Architectural topics. It is not a NAAB accredited degree.

Specializations are available in Design Theory, Ecological and Sustainable Design, and Environment Behavior and Place Studies. These areas of specialized study in the Master of Science in Architecture program accommodate graduates of five or six year programs in architecture, interior architecture, or landscape architecture, and of certain four year baccalaureate degrees. Applicants are considered upon the merits of their academic backgrounds and proposed programs of study. Minimum entrance requirements established by the Kansas State University Graduate School include a bachelor's degree from an accredited university and a grade point average of B (3.0) or better in the last two years of undergraduate study (or a "first class" degree).

This program focuses on research, and therefore does not include the full range of topics required to qualify a student to sit for the examination to become licensed to practice architecture. Since research is the mode of learning at the limits of knowledge, our objective is to develop the capacities needed for independent study and research.

Approximately 10 students matriculate each year, and the total enrollment in the program is about 20.

Required coursework

All M.S.ARCH students will be required to take a class that provides them with the tools to facilitate in-depth academic research. Other coursework will be determined by selected area of emphasis and individual programs of study.

Thesis and Non-Thesis Options

There are two options in the Master of Science in Architecture program. Students must, in conjunction with their advisory committee, choose to pursue either a Thesis or Non-Thesis (coursework only) option. Both options require the submittal of a proposal to the Graduate Committee for approval. Both options require a final examination, which can be the defense of the thesis, or an exam based on coursework taken by the student.

A non-thesis option should have a defined focus within the general area of emphasis. A number of courses must be taken that relate to this focus.

Students may undertake an applied or theoretical research-oriented thesis which involves qualitative and/or quantitative approaches to a problem, or a design-oriented thesis that examines a physical design problem in depth from a number of points of view, including but not limited to theoretical, behavioral, economic, social, and cultural issues.

Admission Requirements

Admission to the Master of Science in Architecture program requires the following. All application materials must be submitted online via the Graduate School website. No hard copy applications or supporting documentation will be accepted.

The deadline for international applicants is January 1 for the fall and August 1 for the spring semester. The priority deadline for domestic applicants is February 1 for the fall and August 1 for the spring semester.

- **A 3.0 graduate point average** (on a 4.0 scale) in all higher education work to-date
- **A baccalaureate degree**
- **Complete the K-State Graduate School application**
- **Pay the application fee (Domestic \$90 & International \$100)**
- **Letters of recommendation:** Three letters of recommendation from professors and/or employers
- **Statement of objectives**
- **Transcripts:** Please include official transcripts from any institution of higher education you have attended. If the transcripts are not in English, a translated copy to English must be provided.
- **Portfolio:** Samples of academic/professional work, including a description of each project, its objectives, and your role and responsibilities. Samples of written work are also highly recommended.
- **TOEFL/IELTS scores (international students):** Applicants who are submitting iBT TOEFL (internet based) scores must have a minimum total score of 95. Applicants who are submitting an IELTS score must have a minimum total score of 7.0.
- **Financial statement (international students)**
- There is a non-refundable application fee of \$90.00 for U.S. citizens/permanent residents and \$100 for international applicants, which includes the department and Graduate School fees. Applications will not be considered without this fee. Applicants will pay their application fee online by credit card, debit card or online check through CollegeNet prior to submitting their application materials. The credit card must be issued by a U.S. financial institution. Visa, Master Card, American Express, and Discover are all accepted.

Special Requirements

A limited number of graduate teaching assistantships are available for students with particularly strong qualifications. Appointment as a teaching assistant requires knowledge in the subject matter of the course, human relations skills, and excellence in spoken and written English. Continuation of an appointment is contingent upon availability of positions and the GTA's academic performance as well as performance as a GTA.

Course Requirements

The coursework only option for this program does not require a culminating experience.

Design theory emphasis

The graduate emphasis in Design Theory enables the student to study specific issues in architectural and urban theory and history. The studies are not based on a rigidly defined set of theoretical courses, but an association of the student's academic interests and faculty expertise. In general, studies consist of the development of a theoretical framework, through selected courses and readings, which is subsequently used as an instrument for the analysis and examination of a particular architectural or urban phenomenon. The so defined inquiry ranges qualitatively from the poetic and speculative to the applicative and pragmatic. Analytical methods encompass a wide range of potential techniques from critical literature review to in-depth building design.

Required curriculum credits

Choose one of the following:

Non-Thesis Option

- ARCH 715 - Topics in Architecture Seminar **Credits: 3**
- ARCH 725 - Architecture Research Methods **Credits: 3**

- **ARCH 830 - Advanced Architectural Studies Credits: 1-18**
Departmental Electives (10-13 credits)
Other Electives (6 credits)

Thesis Option

- **ARCH 715 - Topics in Architecture Seminar Credits: 3**
- **ARCH 725 - Architecture Research Methods Credits: 3**
- **ARCH 899 - Thesis Credits: 1-18**
Departmental Electives (9 credits)
Other Electives (7 credits)

Recommended electives

Students consult with their advisors to select courses that match their educational and research objectives. Appropriate graduate-level history and theory courses will be identified each semester from among current course offerings. Normally, at least one three hour course on an aspect of contemporary architecture is taken by students in the design theory option. It is recommended that international students take one or more courses concerned with American architecture and urbanism. The Design Theory emphasis requires nine of the sixteen elective credits be taken within the discipline; seven may be taken outside the Department of Architecture. Outside electives should be related to the student's overall program of study, to reinforce or complement other courses and their thesis topic.

- **ARCH 700 - Topics in History of the Designed Environment Credits: 3**
- **ARCH 711 - Topics in Architectural Design Methods Credits: 3**
- **ARCH 715 - Topics in Architecture Seminar Credits: 3**
- **ARCH 830 - Advanced Architectural Studies Credits: 1-18**
- **PLAN 815 - Planning Theory, Ethics and Practice Credits: 3**

Ecological and sustainable design

Ecological and Sustainable Design (ESD) focuses on the theory and practice of architectural and environmental design that makes maximum use of the same renewable energy flows and material cycling processes by which all other living systems on earth are sustained. It is an approach to design that is holistic in nature, encompassing a concern for ecological systems, building technological systems, and socio-cultural/existential systems. Ecological systems are studied not only as the context for architecture but also as models for design, providing the fundamental principles by which sustainable buildings are designed and operated. Energy and resource conserving building technologies as well as healthy and ecologically benign building materials are studied so that ecological design principles can be implemented in environmentally appropriate architecture. The emphasis also stresses the socio-economic, political, and cultural/existential context of design as a complexly structured framework within which questions of sustainability must be considered and building designs implemented. The ESD option necessarily involves the development of a broad understanding of architectural and environmental design that is as much philosophical as it is practical.

Required curriculum credits

Choose one of the following:

Non-Thesis Option

- **ARCH 716 - Topics in Environmental Systems in Architecture Credits: 3**
- **ARCH 725 - Architecture Research Methods Credits: 3**

- **ARCH 830 - Advanced Architectural Studies Credits: 1-18**
Electives (16-19 credits)

Thesis Option

- **ARCH 716 - Topics in Environmental Systems in Architecture Credits: 3**
- **ARCH 725 - Architecture Research Methods Credits: 3**
- **ARCH 899 - Thesis Credits: 1-18**
Electives (16 credits)

Recommended elective credits

In addition to completing the required courses, students are encouraged to select an area of focus that will support their thesis. The Ecological and Sustainable Design emphasis recognizes the interdisciplinary and collaborative nature of the sustainable approach to design. As such, at least six elective credits should be taken outside the Department. Students consult with their faculty advisors to develop a program of study that meets their individual needs and interests.

- **AGEC 525 - Natural Resource And Economics Credits: 3**
- **ARCH 715 - Topics in Architecture Seminar Credits: 3**
- **ARCH 716 - Topics in Environmental Systems in Architecture Credits: 3**
- **BIOL 529 - Ecology Credits: 3**
- **CE 563 - Environmental Engineering Fundamentals Credits: 3**
- **ECON 527 - Environmental Economics Credits: 3**
- **GEOG 605 - Remote Sensing of the Environment Credits: 3**
- **GEOG 761 - Human Impact on the Environment Credits: 3**
- **IARC 625 - Lighting Credits: 3**
- **IARC 760 - IARC Seminar Credits: 0-18**
- **LAR 704 - Environmental Landscape Planning and Design Credits: 3**
- **LAR 720 - Public Lands and Natural Resources Law Credits: 3**
- **PHILO 595 - Environmental Ethics Credits: 3**
- **SOCIO 536 - Society and Natural Resources Credits: 3**

Environment behavior and place studies emphasis

Environment-Behavior and Place Studies (EBPS) focuses on the behavioral and experiential aspects of person-environment relationships and their implications for environmental design and research. The program examines varying philosophic and methodological approaches to issues in environmentbehavior and place experience. Approaches to these issues range from quantitative, explanatory styles of research, emphasizing analytic philosophies, pragmatic strategies and solutions, to qualitative, descriptive styles emphasizing continental philosophical concerns. Within this framework, students' programs of study and research are individualized to meet particular interests and needs. After completing an introductory core curriculum, students may choose to concentrate on a specific environmental problem or approach, or to work creatively to combine several approaches and issues. Within environment-behavior and place studies, areas of focus can include community and facility design for special populations, experience of place and landscape, project planning and programming, or a special focus meeting the particular educational and career goals of an individual student. Students, in consultation with the advisor, combine elective courses within and outside the College to meet the needs of their specific areas of focus.

Required curriculum credits

Choose one of the following:

Non-Thesis Option

- ARCH 704 - Topics in Environment and Behavior **Credits: 3**
 - ARCH 720 - Environment and Behavior **Credits: 3**
 - ARCH 725 - Architecture Research Methods **Credits: 3**
 - ARCH 830 - Advanced Architectural Studies **Credits: 1-18**
- Elective Courses (13-16 credits)

Thesis Option

- ARCH 704 - Topics in Environment and Behavior **Credits: 3**
 - ARCH 720 - Environment and Behavior **Credits: 3**
 - ARCH 725 - Architecture Research Methods **Credits: 3**
 - ARCH 899 - Thesis **Credits: 1-18**
- Electives (13 credits)

Recommended elective credits

Any of the thirteen elective credits in the Environment-Behavior and Place Studies Emphasis may be taken outside the Department. Courses in other Departments including Philosophy, Anthropology, Art and History may be considered, pending approval of the student's advisory committee.

- ARCH 703 - Environmental Aesthetics **Credits: 3**
- ARCH 711 - Topics in Architectural Design Methods **Credits: 3**
- ARCH 715 - Topics in Architecture Seminar **Credits: 3**

Total Hours Required for Master's: 30

Interior Architecture and Industrial Design

Nathan Howe, Head

Kutay Güler, Director of Graduate Studies - Interior Architecture

Hernán Gregorio, Director of Graduate Studies - Industrial Design

1087 Seaton Hall

785-532-5992

Fax: 785-532-1086

iaid@k-state.edu

<http://apdesign.k-state.edu/iaid>

Academic Advisor

<https://apdesign.k-state.edu/current-students/advising.html>

The Interior Architecture & Industrial Design department offers two master's degrees, one that focuses on Interior Architecture, or MIARC, and another on Industrial Design, or MINDD. These degrees engage our students to (re)envision building interiors

and the consumer products of the future. Our students are instructed in the essential process of inquiry, design and the making of space and form. With innovative curriculums, our degrees prepare our students to become professional leaders in their industry to shape places we live and work and the products we use every day.

Graduate Certificate

Furniture Design Graduate Certificate

An internal graduate certificate in Furniture Design, available to students enrolled in the Master of Interior Architecture or Master of Industrial Design graduate degree programs who complete specialized coursework focused on the subject of furniture design.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Interior Architecture or Master of Industrial Design at Kansas State University.

Admission Requirements

Must be enrolled in the Master of Interior Architecture or Master of Industrial Design programs and must successfully complete all course requisites.

Course Requirements

Required Courses

- IAID 814 - Furniture Design III **Credits: 4**
- IAID 824 - Advanced Furniture Design Studio **Credits: 6**
- INDD 815 - Advanced Studio Programming **Credits: 2-3**

Electives

Additionally, choose 3 credit hours from the following courses:

- IAID 615 - Topics in Furniture Design **Credits: 1-3**
- IAID 680 - Production Furniture for the Contract Market Research **Credits: 1**
- IAID 681 - Production Furniture for the Contract Market Design **Credits: 2**
- Independent Study (upon request) **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Master of Industrial Design

Master of Industrial Design (MINDD) (non-baccalaureate track)

The Master of Industrial Design is a five-year non-baccalaureate degree. It is designed to give students a diverse exposure in the industrial design profession. Students will focus on ergonomics, human factors, manufacturing processes, product semantics and design theory. Throughout the curriculum there will be a series of workshop courses to expose students to furniture design and fabrication skills. This degree will also have built into the curriculum field trips to major metropolitans, study abroad experiences and internship opportunities. This is a hands-on degree where students are given a balance of design theory, the hard science of

manufacturing and the art of craft. This degree will also provide students with three courses toward an entrepreneurship minor. With just two more courses students can opt to receive their minor in entrepreneurship with their general electives.

Housed within the College of Architecture, Planning and Design and in the department of Interior Architecture and Industrial Design this degree will leverage a wide variety of expertise in designing products for the built environment. Our building in Seaton and Regnier Hall boast large well-appointed design labs. We also have a 20,000 square foot state of the art Fabrication Lab allowing our students to create products as small as a flash drive to as large as the interior cabin of a helicopter.

Our faculty care deeply about teaching students how to innovate for the future needs of the consumer, while still maintaining practices that are sustainable and responsible for our environment. Our Master of Industrial Design is a 170 credit hour degree which will give students a full spectrum of exposure to industry partnerships, study abroad and internship experiences. Our students learn to not only dream up what is next to come tomorrow but learn how to execute that dream today.

Course Requirements

The coursework only option for this program does not require a culminating experience.

Environmental Design Studies Program

First Semester (17 credit hours)

- COMM 106 - Public Speaking I **Credits: 3**
- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**
- ENVD 204 - Studio Seminar **Credits: 1**
- ENVD 250 - History of the Designed Environment I **Credits: 3**
- MATH 100 - College Algebra **Credits: 3**
- General Elective* **Credits: 2**

Second semester (15 credit hours)

- ENGL 100 - Expository Writing I **Credits: 3**
- ENVD 202 - Environmental Design Studio II **Credits: 4**
- ENVD 251 - History of the Designed Environment II **Credits: 3**
- PHYS 115 - Descriptive Physics **Credits: 5**

Industrial Design Program

Third semester (17 credit hours)

- INDD 307 - INDD Design Studio I **Credits: 5**
- INDD 325 - Human Factors in Industrial Design **Credits: 3**
- IAID 290 - Design and Material Culture **Credits: 3**
- IAID 299 - History of Furniture **Credits: 3**
- IAID 430 - Visual Communication I **Credits: 3**

Fourth semester (18 credit hours)

- IAID 407 - Design Workshop I **Credits: 4**
- IAID 431 - Visual Communication II **Credits: 3**
- INDD 320 - INDD Design Studio II **Credits: 5**
- INDD 350 - Product Semantics **Credits: 3**
- INDD 500 - Materials and Manufacturing Processes **Credits: 3**

Fifth semester (17 credit hours)

- IAID 432 - Visual Communication III **Credits: 3**
- IAID 602 - Furniture Design II **Credits: 4**
- INDD 310 - INDD Digital Applications **Credits: 2**
- INDD 435 - INDD Design Studio III **Credits: 5**
- INDD 520 - Materials and Manufacturing Processes II **Credits: 3**

Sixth semester (17 credit hours)

- ENGL 200 - Expository Writing II **Credits: 3**
- INDD 433 - User Interface and User Experience Design **Credits: 3**
- INDD 440 - INDD Design Studio IV **Credits: 5**
- INDD 600 - Professional Practice **Credits: 3**
- LAR 211 - Unlocking Creativity **Credits: 3**

Summer options (7 credit hours)

- INDD 664 - Summer Internship **Credits: 6**
AND
- INDD 665 - Summer Internship Report **Credits: 1**
OR
- Study Abroad **Credits: 7**
OR
- Focus Courses** **Credits: 7**

Seventh semester (14 credit hours)

- INDD 606 - INDD Design Studio V **Credits: 5**
AND
Electives*** **Credits: 9**
OR
- INDD 644 - Internship **Credits: 9**
AND
- INDD 645 - Internship Report **Credits: 5**

Eighth semester (15 credit hours)

- ENTRP 340 - Business Innovation and the Entrepreneurial Mindset **Credits: 3**
- IAID 814 - Furniture Design III **Credits: 4**
- INDD 801 - INDD Design Studio VI **Credits: 5**

- INDD 811 - Design Research **Credits: 3**

Ninth semester (18 credit hours)

- ENTRP Course level 300 or above **Credits: 3**
- INDD 810 - INDD Capstone Studio **Credits: 5-6**
- INDD 815 - Advanced Studio Programming **Credits: 2-3**
- General Electives* **Credits: 6**

Tenth semester (15 credit hours)

- IAID 824 - Advanced Furniture Design Studio **Credits: 6**
OR
- INDD 822 - Advanced Industrial Design Studio **Credits: 6**
- IAID 891 - Contemporary Design Seminar **Credits: 3**
- General Electives* **Credits: 6**

Notes

*A minimum of fourteen (14) general elective credits must be taken. General electives may be taken in pursuit of a minor. They may be taken any time prior to or during the Interior Architecture and Product Design program and may include K-State approved AP, IB, CLEP, K-State Core if selected, and transfer credit. Students may not count more than three (3) total hours of recreation credits toward graduation.

**Focus Course includes INDD 605, as well as other department head approved courses, including those associated with a minor program. Petition process required.

***Electives taken in the seventh semester should support student interest including professional electives and study abroad courses. These may also be associated with a minor program.

Undergraduate Hours: 140

Graduate Hours: 30

Total Hours Required for Master's: 170

Master of Industrial Design (MINDD) (post-baccalaureate track)

The Interior Architecture and Industrial Design department offers an accredited 2/3-year Master's degree in Industrial Design (MINDD), developed for students entering with a previously completed bachelor's degree in any program of study. Applicants with previous degrees in design will be viewed on a case-by-case basis. Depending on how closely your degree aligns with our curriculum, the years needed to complete the MINDD may be reduced from the three-year-plan. This degree is approved by the National Association of Schools of Art & Design (NASAD), and incorporates coursework in industrial design and furniture design.

Course Requirements

The coursework only option for this program does not require a culminating experience.

Summer Study (9 credit hours)

- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 202 - Environmental Design Studio II **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**

First Semester (17 credit hours)

- IAID 290 - Design and Material Culture **Credits: 3**
- IAID 299 - History of Furniture **Credits: 3**
- IAID 430 - Visual Communication I **Credits: 3**
- INDD 307 - INDD Design Studio I **Credits: 5**
- INDD 325 - Human Factors in Industrial Design **Credits: 3**

Second Semester (18 credit hours)

- IAID 407 - Design Workshop I **Credits: 4**
- IAID 431 - Visual Communication II **Credits: 3**
- INDD 320 - INDD Design Studio II **Credits: 5**
- INDD 350 - Product Semantics **Credits: 3**
- INDD 500 - Materials and Manufacturing Processes **Credits: 3**

Third semester (17 credit hours)

- IAID 432 - Visual Communication III **Credits: 3**
- IAID 602 - Furniture Design II **Credits: 4**
- INDD 310 - INDD Digital Applications **Credits: 2**
- INDD 435 - INDD Design Studio III **Credits: 5**
- INDD 520 - Materials and Manufacturing Processes II **Credits: 3**

Fourth Semester (17 credit hours)

- ENTRP 340 - Business Innovation and the Entrepreneurial Mindset **Credits: 3**
- INDD 433 - User Interface and User Experience Design **Credits: 3**
- INDD 440 - INDD Design Studio IV **Credits: 5**
- INDD 811 - Design Research **Credits: 3**
- LAR 211 - Unlocking Creativity **Credits: 3**

Summer Semester II (9 credit hours)

- IAID 814 - Furniture Design III **Credits: 4**
- INDD 801 - INDD Design Studio VI **Credits: 5**

Fifth Semester (12 credit hours)

- INDD 810 - INDD Capstone Studio **Credits:** 5-6
- INDD 815 - Advanced Studio Programming **Credits:** 2-3
- ENTRP - Any ENTRP course level 300 or above **Credits:** 3

Sixth semester (12 credit hours)

- INDD 822 - Advanced Industrial Design Studio **Credits:** 6
or
- IAID 824 - Advanced Furniture Design Studio **Credits:** 6
- IAID 891 - Contemporary Design Seminar **Credits:** 3
- INDD 600 - Professional Practice **Credits:** 3

Notes

Total credit hours required for graduate school program of study is 30. The following courses (or their equivalents) must be completed prior to entry in the postbaccalaureate track: MATH 100 and PHYS 113 or PHYS 115.

Undergraduate Credit Hours: 81

Graduate Credit Hours: 30

Total Hours Required for Master's: 111

Master of Interior Architecture

Master of Interior Architecture (MIARC) (non-baccalaureate track)

The Master of Interior Architecture provides a comprehensive and vibrant approach to studying design. From reconstructing building interiors to individual products, our students are grounded in the essential process of inquiry, design and the making of space and form.

[Click here to view the Interior Architecture and Industrial Design graduate program page.](#)

Course Requirements

Environmental Design Studies Program

First semester (17 credit hours)

- COMM 106 - Public Speaking I **Credits:** 3
- ENVD 201 - Environmental Design Studio I **Credits:** 4
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits:** 1
- ENVD 204 - Studio Seminar **Credits:** 1

- ENVD 250 - History of the Designed Environment I **Credits: 3**
- MATH 100 - College Algebra **Credits: 3**
- General Elective **Credits: 2**

Second semester (15 credit hours)

- ENGL 100 - Expository Writing I **Credits: 3**
- ENVD 202 - Environmental Design Studio II **Credits: 4**
- ENVD 251 - History of the Designed Environment II **Credits: 3**
- PHYS 115 - Descriptive Physics **Credits: 5**

IARC Non-Baccalaureate Professional Program

Third semester (17 credit hours)

- IAID 290 - Design and Material Culture **Credits: 3**
- IAID 299 - History of Furniture **Credits: 3**
- IAID 430 - Visual Communication I **Credits: 3**
- IARC 248 - Fundamentals of Architectural Technology **Credits: 3**
- IARC 307 - IARC Design Studio I **Credits: 5**

Fourth semester (18 credit hours)

- ARCH 347 - Structural Systems in Architecture I **Credits: 4**
- ARCH 433 - Building Construction Systems in Architecture I **Credits: 3**
- ENGL 200 - Expository Writing II **Credits: 3**
- IAID 431 - Visual Communication II **Credits: 3**
- IARC 320 - IARC Design Studio II **Credits: 5**

Fifth semester (18 credit hours)

- ARCH 413 - Environmental Systems in Architecture I **Credits: 4**
- ARCH 448 - Structural Systems in Architecture II **Credits: 4**
- IARC 310 - IARC Digital Applications **Credits: 2**
- IARC 409 - Materials and Finishes **Credits: 3**
- IARC 435 - IARC Design Studio III **Credits: 5**

Sixth semester (18 credit hours)

- ARCH 514 - Environmental Systems in Architecture II **Credits: 3**
- IAID 407 - Design Workshop I **Credits: 4**
- IARC 440 - IARC Design Studio IV **Credits: 5**
- IARC 625 - Lighting **Credits: 3**
- IARC 628 - Construction Documentation **Credits: 3**

Summer Study (7 credit hours)

- IARC 664 - Summer Internship **Credits: 6**
- IARC 665 - Summer Internship Report **Credits: 1**
OR
- Study Abroad **Credits: 7**
OR
- Focus Courses** **Credits: 7**

Seventh semester (15 credit hours)

- IAID 602 - Furniture Design II **Credits: 4**
- IAID 753 - Professional Practice: Professional Responsibility **Credits: 1**
- IAID 754 - Professional Practice: Office Practices **Credits: 1**
- IARC 755 - Professional Practice: Discipline-Specific Topics **Credits: 1**
- IARC 801 - IARC Design Studio V **Credits: 5**
- IARC 811 - Design Research **Credits: 2-3**

Eighth semester (14 credit hours)

- IARC 606 - IARC Design Studio VI **Credits: 5**
- Electives*** **Credits: 9**
OR
- IARC 644 - Internship **Credits: 9**
- IARC 645 - Internship Report **Credits: 5**

Ninth semester (16 credit hours)

- IARC 810 - IARC Capstone Studio **Credits: 5-6**
- IAID 814 - Furniture Design III **Credits: 4**
- IARC 815 - Advanced Studio Programming **Credits: 2-3**
- General Elective* **Credits: 3**

Tenth semester (15 credit hours)

- IARC 823 - Advanced Interior Architecture Design Studio **Credits: 6**
OR
- IAID 824 - Advanced Furniture Design Studio **Credits: 6**
- IAID 891 - Contemporary Design Seminar **Credits: 3**
- General Electives* **Credits: 6**

Notes

*A minimum of eleven (11) general elective credits must be taken. General electives may be taken in pursuit of a minor. They may be taken any time prior to or during the Interior Architecture program and may include K-State approved AP, IB, CLEP and transfer credit. Students may not count more than three (3) total hours of recreation credits toward graduation.

****Focus Courses** include IARC 605 Problems in IARC, as well as other department head approved courses, including those associated with a minor program.

*****Electives** taken in the eighth semester should support student interest including professional electives and study abroad courses. These may also be associated with a minor program.

Undergraduate Hours: 140

Graduate Hours: 30

Total Hours Required for Master's: 170

Master of Interior Architecture (MIARC) (post-baccalaureate track)

The Master of Interior Architecture provides a comprehensive and vibrant approach to studying design. From reconstructing building interiors to individual products, our students are grounded in the essential process of inquiry, design and the making of space and form.

[Click here to view the Interior Architecture and Industrial Design graduate program page.](#)

Course Requirements

Summer Study Semester I (9 credit hours)

- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 202 - Environmental Design Studio II **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**

First semester (17 credit hours)

- IAID 290 - Design and Material Culture **Credits: 3**
- IAID 299 - History of Furniture **Credits: 3**
- IAID 430 - Visual Communication I **Credits: 3**
- IARC 248 - Fundamentals of Architectural Technology **Credits: 3**
- IARC 307 - IARC Design Studio I **Credits: 5**

Second semester (15 credit hours)

- ARCH 347 - Structural Systems in Architecture I **Credits: 4**
- ARCH 433 - Building Construction Systems in Architecture I **Credits: 3**
- IAID 431 - Visual Communication II **Credits: 3**
- IARC 320 - IARC Design Studio II **Credits: 5**

Summer Study Semester II (3 credit hours)

- IARC 409 - Materials and Finishes **Credits: 3**

Third semester (18 credit hours)

- ARCH 413 - Environmental Systems in Architecture I **Credits: 4**
- ARCH 448 - Structural Systems in Architecture II **Credits: 4**
- IARC 310 - IARC Digital Applications **Credits: 2**
- IARC 435 - IARC Design Studio III **Credits: 5**
- IARC 811 - Design Research **Credits: 2-3**

Fourth semester (18 credit hours)

- ARCH 514 - Environmental Systems in Architecture II **Credits: 3**
- IAID 407 - Design Workshop I **Credits: 4**
- IARC 625 - Lighting **Credits: 3**
- IARC 440 - IARC Design Studio IV **Credits: 5**
- IARC 628 - Construction Documentation **Credits: 3**

Summer Study Semester III (9 credit hours)

- IAID 602 - Furniture Design II **Credits: 4**
- IARC 801 - IARC Design Studio V **Credits: 5**

Fifth semester (16 credit hours)

- IAID 753 - Professional Practice: Professional Responsibility **Credits: 1**
- IAID 754 - Professional Practice: Office Practices **Credits: 1**
- IAID 814 - Furniture Design III **Credits: 4**
- IARC 755 - Professional Practice: Discipline-Specific Topics **Credits: 1**
- IARC 810 - IARC Capstone Studio **Credits: 5-6**
- IARC 815 - Advanced Studio Programming **Credits: 2-3**

Sixth semester (9 credit hours)

- IARC 823 - Advanced Interior Architecture Design Studio **Credits: 6**
OR
- IAID 824 - Advanced Furniture Design Studio **Credits: 6**
- IAID 891 - Contemporary Design Seminar **Credits: 3**

Notes

Total credit hours required for graduate school program of study is 31. The following courses (or their equivalents) must be completed prior to entry in the post-baccalaureate track: MATH 100 and PHYS 113 or PHYS 115.

Undergraduate Hours: 84

Graduate Hours: 30

Total Hours Required for Master's: 114

Landscape Architecture and Regional & Community Planning

Huston Gibson, Head

1086 Seaton Hall
785-532-5961
Fax: 785-532-6722
Email: larcdept@ksu.edu
apdesign.k-state.edu/larcp

The Department of Landscape Architecture and Regional & Community Planning (LARCP) offers two accredited professional degree options: a Master of Landscape Architecture and a Master of Regional & Community Planning; an online Master of Science in Community Development; and a Community Planning Minor. The programs provide nationally recognized and affordable education, real world engagement, and a strong LARCP community. Graduates of the programs are in demand throughout the country in private practice, governmental service, and academic setting.

The Master of Landscape Architecture (MLA) and Master of Regional & Community Planning (MRCP) degrees have two entry points. Undergraduate students complete a five-year plus Non-Baccalaureate Track, see Department of Landscape Architecture and Regional & Community Planning page in the Undergraduate Catalog. Students who have completed a bachelor's degree, regardless of the field of study, complete a Post-Baccalaureate Track of study (3-years plus for the MLA and 2-years for the MRCP).

The MLA program prepares students to create and protect outdoor places of significance to the human experience; address ecological and social needs; plan for inclusive and equitable communities; to design landscape. Information about the resources and opportunities supporting students' preparation for professional practice is available at <https://apdesign.k-state.edu/larcp/la/>.

The MRCP program prepares students to be advocates for resilient cities that enhance quality of life in ways that are sustainable, equitable, and accessible to all citizens. We help communities address challenges related to resource conservation, growing of diverse populations, and continually changing technologies and value systems. Information about the resources and opportunities supporting students' preparation for professional practice is available at <https://apdesign.k-state.edu/larcp/rcp/>.

The Master of Science in Community Development prepares students to promote participatory democracy, sustainable development, rights, equality, economic opportunity, and social justice, through the organization, education and empowerment of people within their communities. Information about the fully online degree is available at <https://online.k-state.edu/programs/community-development-masters/>.

Graduate Certificate

Community Development Graduate Certificate

The online graduate certificate in Community Development (CD) will provide foundations of the CD field and associated theories. Opportunity for elective selections allow students to pursue subtopics related to community development such as community leadership & capacity building, community economic strategies, international development, not-for-profit management, and/or sustainable communities.

This Community Development graduate certificate is a 12-credit hour online collaborative interinstitutional certificate offered through the Department of Landscape Architecture and Regional & Community Planning in cooperation with the Innovative

Digital Education Alliance (IDEA). Participating universities include Kansas State University, North Dakota State University, and University of Nebraska. Students may enroll in this collaborative program at any of the participating universities. While the certificate name may vary by university, the curriculum will be comparable, and courses offered in the program will be the collaborative result of a diverse faculty from within the participating universities.

Additional information may be obtained by contacting:

Dr. Huston Gibson
Professor and Department Head
Department of Landscape Architecture and Regional & Community Planning
Kansas State University
1086 Seaton Hall
Manhattan, KS 66506-2909
(785) 532-5961
larcdept@ksu.edu

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Community Development at Kansas State University.

Course Requirements

Completion of core requirements and 6 credit hours of CDPLN electives.

Required Courses

- CDPLN 705 - Organizing for Community Change **Credits: 3**
- CDPLN 715 - Principles and Strategies of Community Change **Credits: 3**

Elective Courses

Minimum of 6 credit hours of CDPLN electives.

- CDPLN 620 - Ecological Economics **Credits: 3**
- CDPLN 633 - Grantwriting **Credits: 3**
- CDPLN 655 - Land Development Planning **Credits: 3**
- CDPLN 700 - Foundations of Community Development **Credits: 3**
- CDPLN 701 - Special Studies in Community Development **Credits: 1-3**
- CDPLN 703 - Applied Community Development **Credits: 1-3**
- CDPLN 704 - Community Leadership and Capacity Building **Credits: 3**
- CDPLN 706 - Economic Development Strategies and Programs **Credits: 3**
- CDPLN 710 - Community Analysis **Credits: 3**
- CDPLN 711 - Immigrants in Communities **Credits: 3**
- CDPLN 712 - Sustainable Communities **Credits: 3**
- CDPLN 713 - Nonprofit Management **Credits: 3**
- CDPLN 720 - Community and Regional Economic Analysis **Credits: 3**
- CDPLN 725 - Community and Natural Resource Management **Credits: 3**
- or successful completion of any total of 6 credit hours of CDPLN electives

Total Hours Required for Graduate Certificate: 12

Master of Landscape Architecture

Master of Landscape Architecture (MLA) (non-baccalaureate track)

[Click here to view the Landscape Architecture and Regional & Community Planning graduate program page.](#)

Landscape planning and design have been part of the curriculum at Kansas State University since 1871, being part of the required curriculum of all students in the early days of the institution. The first MLA student graduated in 1968. The degree is offered through two tracks:

- The non-baccalaureate track for students without a previous degree allows students to enter as freshmen and progress through the professional graduate degree in landscape architecture
- The post-baccalaureate track for students with a previous degree allows completion of a first professional degree in landscape architecture.

The MLA program is fully accredited by the Landscape Architectural Accreditation Board of the American Society of Landscape Architects.

Program definition

Our definition of advanced landscape architecture education includes development of a strong foundation of traditional knowledge and skills as well as self-motivated and defined scholarship. Throughout the program, we are committed to research as a means of learning and serving communities and individuals.

Graduates of our program practice in a wide variety of natural and built environments including urban, suburban, rural, wilderness, domestic, and international. Their practice takes place in small and large firms, multidisciplinary firms, design/build, land development, facility management, public practice, academic settings, and within other fields. Kansas State University MLA graduates provide leadership in and advocacy for stewardship of the land and the interface of people with the land. They seek longterm solutions concerning land health, human dignity, and aesthetic quality.

Program mission and objectives

We prepare graduates to be leaders in the field of landscape architecture by integrating student learning with faculty research and creative pursuits and engaging with partners in communities and other disciplines. Through these activities we significantly advance the discipline of landscape architecture. We blend our understanding of ecological and societal needs to design, plan and manage the interface between humans and nature to shape environments in ways that benefit both through critical thinking, design processes and implementation. Focused on preparation for professional practice, we are highly skilled, diligent, passionate people dedicated and working together in vertically integrated studios that are collaborative and energetic.

Course Requirements

MLA program Master's Report Option

First semester: 17 credit hours

- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**
- ENVD 204 - Studio Seminar **Credits: 1**
- ENVD 250 - History of the Designed Environment I **Credits: 3**

- COMM 106 - Public Speaking I **Credits: 3**
- MATH 100 - College Algebra **Credits: 3**
- General Elective **Credits: 2**

Second semester: 15 credit hours

- ENGL 100 - Expository Writing I **Credits: 3**
- ENVD 202 - Environmental Design Studio II **Credits: 4**
- ENVD 251 - History of the Designed Environment II **Credits: 3**
- PHYS 115 - Descriptive Physics **Credits: 5**

Third semester: 16 credit hours

- LAR 010 - Travel: Regional 1 **Credits: 0**
- LAR 101 - Introduction to Landscape Architecture **Credits: 3**
- LAR 220 - Drawing Landscapes Studio **Credits: 5**
- LAR 230 - Modeling Landscapes Studio **Credits: 5**
- LAR 350 - Plants and Design **Credits: 3**

Fourth semester: 16 credit hours

- ENGL 200 - Expository Writing II **Credits: 3**
- LAR 020 - Travel: Regional 2 **Credits: 0**
- LAR 298 - Ethics and Environmental Dilemmas **Credits: 3**
- LAR 420 - Socio-Ecological Systems Studio **Credits: 5**
- LAR 433 - Landscape History and Design Studio **Credits: 5**

Summer Study: 9 credit hours

- LAR 030 - Travel: Narratives and Placemaking **Credits: 0**
- LAR 425 - Narratives and Placemaking Seminar **Credits: 2**
- LAR 430 - Narratives and Placemaking Studio **Credits: 4**
- PLAN 115 - Introduction to Regional and Community Planning **Credits: 3**

Fifth semester: 16 credit hours

- LAR 040 - Travel: Major City 1 **Credits: 0**
- LAR 438 - Site Design Implementation **Credits: 5**
- LAR 442 - Site Research and Design Studio **Credits: 5**
- LAR 444 - Career and Academic Planning **Credits: 3**
- LAR 352 - Landscape Performance Lab **Credits: 3**

Sixth semester: 13 credit hours

- LAR 050 - Travel: Major City 2 **Credits: 0**

- LAR 439 - Master Plan Design and Implementation **Credits: 5**
- LAR 646 - Community Engagement Studio **Credits: 5**
- General Elective **Credits: 3**

Seventh semester: 15 credit hours

- LAR 740 - Advanced Studio **Credits: 5**
- LAR 725 - Research Methods **Credits: 3**
- LAR 750 - Advanced Seminar **Credits: 3**
- LAR 754 - Professional Practice: Office Practices **Credits: 1**
- Professional Elective **Credits: 3**

Eighth semester: 12-14 credit hours

KCDC or Study Abroad Option:

- LAR 703 - Landscape Architecture Off-Campus Studio **Credits: 5**
- Professional Electives **Credits: 9**
or
Internship Option:
- LAR 703 Landscape Architecture Off-Campus Studio **Credits: 5**
- LAR 655 - Landscape Architecture Professional Internship **Credits: 6-9**

Ninth semester: 11 credit hours

- LAR 705 - Master's Project Studio 1 **Credits: 5**
- LAR 753 - Professional Practice: Professional Responsibility **Credits: 1**
- LAR 897 - Proposal Writing **Credits: 2**
- Professional Elective **Credits: 3**

Tenth semester: 11 credit hours

- LAR 710 - Master's Project Studio 2 **Credits: 3**
- LAR 898 - Master's Report **Credits: 2**
- Professional Elective **Credits: 6**

MLA program Master's Thesis Option

First Semester: 17 credit hours

- COMM 105 - Public Speaking IA **Credits: 2**
- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**
- ENVD 204 - Studio Seminar **Credits: 1**
- ENVD 250 - History of the Designed Environment I **Credits: 3**
- MATH 100 - College Algebra **Credits: 3**

- General Elective **Credits: 2**

Second semester: 15 credit hours

- ENGL 100 - Expository Writing I **Credits: 3**
- ENVD 202 - Environmental Design Studio II **Credits: 4**
- ENVD 251 - History of the Designed Environment II **Credits: 3**
- PHYS 115 - Descriptive Physics **Credits: 5**

Third semester: 16 credit hours

- LAR 010 - Travel: Regional 1 **Credits: 0**
- LAR 101 - Introduction to Landscape Architecture **Credits: 3**
- LAR 220 - Drawing Landscapes Studio **Credits: 5**
- LAR 230 - Modeling Landscapes Studio **Credits: 5**
- LAR 350 - Plants and Design **Credits: 3**

Fourth semester: 16 credit hours

- ENGL 200 - Expository Writing II **Credits: 3**
- LAR 020 - Travel: Regional 2 **Credits: 0**
- LAR 298 - Ethics and Environmental Dilemmas **Credits: 3**
- LAR 420 - Socio-Ecological Systems Studio **Credits: 5**
- LAR 433 - Landscape History and Design Studio **Credits: 5**

Summer Study: 9 credit hours

- LAR 030 - Travel: Narratives and Placemaking **Credits: 0**
- LAR 352 - Landscape Performance Lab **Credits: 3**
- LAR 425 - Narratives and Placemaking Seminar **Credits: 2**
- LAR 430 - Narratives and Placemaking Studio **Credits: 4**

Fifth semester: 16 credit hours

- LAR 040 - Travel: Major City 1 **Credits: 0**
- LAR 352 - Landscape Performance Lab **Credits: 3**
- LAR 438 - Site Design Implementation **Credits: 5**
- LAR 442 - Site Research and Design Studio **Credits: 5**
- LAR 444 - Career and Academic Planning **Credits: 3**

Sixth semester: 13 credit hours

- LAR 050 - Travel: Major City 2 **Credits: 0**
- LAR 439 - Master Plan Design and Implementation **Credits: 5**
- LAR 646 - Community Engagement Studio **Credits: 5**

- General Elective **Credits: 3**

Seventh semester: 14 credit hours

- LAR 725 - Research Methods **Credits: 3**
- LAR 740 - Advanced Studio **Credits: 5**
- LAR 750 - Advanced Seminar **Credits: 3**

Eighth semester: 13-16 credit hours

KCDC or Study Abroad Option:

- LAR 703 - Landscape Architecture Off-Campus Studio **Credits: 5**
Professional Elective **Credits: 9**
OR Credits / Units: 5
Internship Option: **Credits / Units: 5**
LAR 703 Landscape Architecture Off-Campus Studio **Credits / Units: 5**
- LAR 655 - Landscape Architecture Professional Internship **Credits: 6-9**
- LAR 897 - Proposal Writing **Credits: 2**

Ninth semester: 11 credit hours

- LAR 753 - Professional Practice: Professional Responsibility **Credits: 1**
- LAR 754 - Professional Practice: Office Practices **Credits: 1**
- LAR 899 - Research in Landscape Architecture **Credits: 1-18**
- Professional Electives **Credits: 6**

Tenth semester: 10 credit hours

- LAR 899 - Research in Landscape Architecture **Credits: 1-18**
- Professional Electives **Credits: 6**

MLA program Master's Coursework Option

First Semester: 17 credit hours

- ENVD 201 - Environmental Design Studio I **Credits: 4**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**
- ENVD 204 - Studio Seminar **Credits: 1**
- ENVD 250 - History of the Designed Environment I **Credits: 3**
- MATH 100 - College Algebra **Credits: 3**
- COMM 106 - Public Speaking I **Credits: 3**
- General Elective **Credits: 2**

Second Semester: 15 credit hours

- ENVD 202 - Environmental Design Studio II **Credits: 4**

- ENVD 251 - History of the Designed Environment II **Credits: 3**
- PHYS 115 - Descriptive Physics **Credits: 5**
- ENGL 100 - Expository Writing I **Credits: 3**

Third Semester: 16 credit hours

- LAR 010 - Travel: Regional 1 **Credits: 0**
- LAR 101 - Introduction to Landscape Architecture **Credits: 3**
- LAR 220 - Drawing Landscapes Studio **Credits: 5**
- LAR 230 - Modeling Landscapes Studio **Credits: 5**
- LAR 350 - Plants and Design **Credits: 3**

Fourth Semester: 16 credit hours

- LAR 020 - Travel: Regional 2 **Credits: 0**
- LAR 298 - Ethics and Environmental Dilemmas **Credits: 3**
- LAR 420 - Socio-Ecological Systems Studio **Credits: 5**
- LAR 433 - Landscape History and Design Studio **Credits: 5**
- ENGL 200 - Expository Writing II **Credits: 3**

Summer Study: 9 credit hours

- LAR 030 - Travel: Narratives and Placemaking **Credits: 0**
- LAR 425 - Narratives and Placemaking Seminar **Credits: 2**
- LAR 430 - Narratives and Placemaking Studio **Credits: 4**
- PLAN 115 - Introduction to Regional and Community Planning **Credits: 3**

Fifth Semester: 16 credit hours

- LAR 040 - Travel: Major City 1 **Credits: 0**
- LAR 352 - Landscape Performance Lab **Credits: 3**
- LAR 438 - Site Design Implementation **Credits: 5**
- LAR 442 - Site Research and Design Studio **Credits: 5**
- LAR 444 - Career and Academic Planning **Credits: 3**

Sixth Semester: 13 credit hours

- LAR 050 - Travel: Major City 2 **Credits: 0**
- LAR 439 - Master Plan Design and Implementation **Credits: 5**
- LAR 646 - Community Engagement Studio **Credits: 5**
- General Elective **Credits: 3**

Seventh Semester: 15 credit hours

- LAR 725 - Research Methods **Credits: 3**

- LAR 740 - Advanced Studio **Credits: 5**
- LAR 750 - Advanced Seminar **Credits: 3**
- LAR 754 - Professional Practice: Office Practices **Credits: 1**
Professional Elective **Credits: 3**

Eighth Semester: 12-14 credit hours

- KCDC or Study Abroad Option:
- LAR 703 - Landscape Architecture Off-Campus Studio **Credits: 5**
Professional Elective **Credits: 9**
OR
Internship Option:
LAR 703 Landscape Architecture Off-Campus Studio **Credits: 5**
- LAR 655 - Landscape Architecture Professional Internship **Credits: 6-9**

Ninth Semester: 11 credit hours

- LAR 751 - Comprehensive Studio 1 **Credits: 5**
- LAR 753 - Professional Practice: Professional Responsibility **Credits: 1**
- LAR 761 - Comprehensive Seminar 1 **Credits: 2**
Professional Elective **Credits: 3**

Tenth Semester: 13 credit hours

- LAR 752 - Comprehensive Studio 2 **Credits: 5**
- LAR 762 - Comprehensive Seminar 2 **Credits: 2**
Professional Elective **Credits: 6**

Notes

Undergraduate Hours: 119

Graduate Hours: 34

Total (MLA) Degree Requirement: 153

The K-State 8 General Education areas are covered by courses required in the Landscape Architecture curriculum. Information about the K-State 8 is available on the web and in the university catalog.

All required courses taught in the landscape architecture and regional & community planning programs that are counted toward the degree must be passed with a grade of C or better. Graduate School admission is contingent upon completion of all required courses in the 3rd - 6th semesters.

*A minimum of six (6) general elective credits must be taken. General elective may be taken in pursuit of a minor. They may be taken any time prior to or during the Landscape Architecture program and may include KSU approved AP, IB, CLEP and transfer credit. Students may not count more than 3 total hours of recreation credits toward graduation.

**Off-campus semester: Two distinct study opportunities are offered, each requiring 14 credit hours. The study abroad and the internship options have course requirements that substitute for the 9 professional elective credit requirements. If the internship option is not selected during the seventh or eighth semester, a summer internship is required before graduation.

*** Six (6) credit hours of the required graduate level professional electives must be LAR courses. Students may petition for an exception to this policy if there is a demonstrated academic benefit.

Undergraduate Hours: 119

Graduate Hours: 34

Total Hours Required for Master's: 153-155

Master of Landscape Architecture (MLA) (post-baccalaureate track)

[Click here to view the Landscape Architecture and Regional & Community Planning graduate program page.](#)

Landscape planning and design have been part of the curriculum at Kansas State University since 1871, being part of the required curriculum of all students in the early days of the institution. The first MLA student graduated in 1968. The degree is offered through two tracks:

- The non-baccalaureate track for students without a previous degree allows students to enter as freshmen and progress through the professional graduate degree in landscape architecture
- The post-baccalaureate track for students with a previous degree allows completion of a first professional degree in landscape architecture.

The MLA program is fully accredited by the Landscape Architectural Accreditation Board of the American Society of Landscape Architects.

Program Definition

Our definition of advanced landscape architecture education includes development of a strong foundation of traditional knowledge and skills as well as self-motivated and defined scholarship. Throughout the program, we are committed to research as a means of learning and serving communities and individuals.

Graduates of our program practice in a wide variety of natural and built environments including urban, suburban, rural, wilderness, domestic, and international. Their practice takes place in small and large firms, multidisciplinary firms, design/build, land development, facility management, public practice, academic settings, and within other fields. Kansas State University MLA graduates provide leadership in and advocacy for stewardship of the land and the interface of people with the land. They seek longterm solutions concerning land health, human dignity, and aesthetic quality.

The MLA program and curriculum

There are two track offerings to the Master of Landscape Architecture, non-baccalaureate and post-baccalaureate degrees, both of which result in a master's degree.

Course Requirements

MLA program Master's Report Option

First semester: 16 credit hours

- LAR 010 - Travel: Regional 1 **Credits: 0**
- LAR 101 - Introduction to Landscape Architecture **Credits: 3**
- LAR 220 - Drawing Landscapes Studio **Credits: 5**
- LAR 230 - Modeling Landscapes Studio **Credits: 5**
- LAR 350 - Plants and Design **Credits: 3**

Second semester: 13 credit hours

- LAR 020 - Travel: Regional 2 **Credits: 0**
- LAR 420 - Socio-Ecological Systems Studio **Credits: 5**
- LAR 433 - Landscape History and Design Studio **Credits: 5**
- Professional Elective **Credits: 3**

Summer study: 6 credit hours

- LAR 030 - Travel: Narratives and Placemaking **Credits: 0**
- LAR 425 - Narratives and Placemaking Seminar **Credits: 2**
- LAR 430 - Narratives and Placemaking Studio **Credits: 4**

Third semester: 16 credit hours

- LAR 040 - Travel: Major City 1 **Credits: 0**
- LAR 352 - Landscape Performance Lab **Credits: 3**
- LAR 438 - Site Design Implementation **Credits: 5**
- LAR 442 - Site Research and Design Studio **Credits: 5**
- ***Professional Elective **Credits: 3**

Fourth semester: 16 credit hours

- LAR 439 - Master Plan Design and Implementation **Credits: 5**
- LAR 725 - Research Methods **Credits: 3**
- LAR 740 - Advanced Studio **Credits: 5**
- LAR 750 - Advanced Seminar **Credits: 3**
- LAR 050 - Travel: Major City 2 **Credits: 0**

Fifth semester: 9 credit hours

- LAR 705 - Master's Project Studio 1 **Credits: 5**
- LAR 753 - Professional Practice: Professional Responsibility **Credits: 1**
- LAR 754 - Professional Practice: Office Practices **Credits: 1**
- LAR 897 - Proposal Writing **Credits: 2**

Sixth semester: 11 credit hours

- LAR 710 - Master's Project Studio 2 **Credits: 3**

- LAR 898 - Master's Report **Credits: 2**
- ***Professional Electives **Credits: 6**

MLA program Master's Thesis Option

First semester: 16 credit hours

- LAR 010 - Travel: Regional 1 **Credits: 0**
- LAR 101 - Introduction to Landscape Architecture **Credits: 3**
- LAR 220 - Drawing Landscapes Studio **Credits: 5**
- LAR 230 - Modeling Landscapes Studio **Credits: 5**
- LAR 350 - Plants and Design **Credits: 3**

Second semester: 13 credit hours

- LAR 020 - Travel: Regional 2 **Credits: 0**
- LAR 420 - Socio-Ecological Systems Studio **Credits: 5**
- LAR 433 - Landscape History and Design Studio **Credits: 5**
- Professional Elective **Credits: 3**

Summer Study: 6 credit hours

- LAR 030 - Travel: Narratives and Placemaking **Credits: 0**
- LAR 425 - Narratives and Placemaking Seminar **Credits: 2**
- LAR 430 - Narratives and Placemaking Studio **Credits: 4**

Third semester: 16 credit hours

- LAR 040 - Travel: Major City 1 **Credits: 0**
- LAR 352 - Landscape Performance Lab **Credits: 3**
- LAR 438 - Site Design Implementation **Credits: 5**
- LAR 442 - Site Research and Design Studio **Credits: 5**
- LAR 725 - Research Methods **Credits: 3**

Fourth semester: 15 credit hours

- LAR 439 - Master Plan Design and Implementation **Credits: 5**
- LAR 740 - Advanced Studio **Credits: 5**
- LAR 750 - Advanced Seminar **Credits: 3**
- LAR 897 - Proposal Writing **Credits: 2**
- LAR 050 - Travel: Major City 2 **Credits: 0**

Fifth semester: 11 credit hours

- LAR 753 - Professional Practice: Professional Responsibility **Credits: 1**

- LAR 754 - Professional Practice: Office Practices **Credits: 1**
- LAR 899 - Research in Landscape Architecture **Credits: 1-18**
- ***Professional Electives **Credits: 6**

Sixth semester: 10 credit hours

- LAR 899 - Research in Landscape Architecture **Credits: 1-18**
- ***Professional Electives **Credits: 6**

MLA Program Coursework Option

First semester: 16 credit hours

- LAR 010 - Travel: Regional 1 **Credits: 0**
- LAR 101 - Introduction to Landscape Architecture **Credits: 3**
- LAR 220 - Drawing Landscapes Studio **Credits: 5**
- LAR 230 - Modeling Landscapes Studio **Credits: 5**
- LAR 350 - Plants and Design **Credits: 3**

Second semester: 13 credit hours

- LAR 020 - Travel: Regional 2 **Credits: 0**
- LAR 420 - Socio-Ecological Systems Studio **Credits: 5**
- LAR 433 - Landscape History and Design Studio **Credits: 5**
- Professional Electives **Credits: 3**

Summer Study: 6 credit hours

- LAR 030 - Travel: Narratives and Placemaking **Credits: 0**
- LAR 430 - Narratives and Placemaking Studio **Credits: 4**
- LAR 425 - Narratives and Placemaking Seminar **Credits: 2**

Third semester: 13 credit hours

- LAR 040 - Travel: Major City 1 **Credits: 0**
- LAR 352 - Landscape Performance Lab **Credits: 3**
- LAR 438 - Site Design Implementation **Credits: 5**
- LAR 442 - Site Research and Design Studio **Credits: 5**
- Professional Electives **Credits: 3**

Fourth semester: 16 credit hours

- LAR 050 - Travel: Major City 2 **Credits: 0**
- LAR 439 - Master Plan Design and Implementation **Credits: 5**
- LAR 725 - Research Methods **Credits: 3**

- LAR 740 - Advanced Studio Credits: 5
- LAR 750 - Advanced Seminar Credits: 3

Fifth semester: 9 credit hours

- LAR 753 - Professional Practice: Professional Responsibility Credits: 1
- LAR 754 - Professional Practice: Office Practices Credits: 1
- LAR 751 - Comprehensive Studio 1 Credits: 5
- LAR 761 - Comprehensive Seminar 1 Credits: 2

Sixth semester: 13 credit hours

- LAR 752 - Comprehensive Studio 2 Credits: 5
- LAR 762 - Comprehensive Seminar 2 Credits: 2
- Professional Electives Credits: 6

Notes

Undergraduate Hours: 53

Graduate Hours: 34

Total (MLA) Degree Requirement: 87-89

Total credit hours required for graduate school program of study = 34

All required courses taught in the landscape architecture and regional & community planning programs that are counted toward the degree must be passed with a grade of C or better.

*** Six (6) credit hours of the required graduate level professional electives must be LAR courses. Students may petition for an exception to this policy if there is a demonstrated academic benefit.

All required courses taught in the landscape architecture and regional & community planning programs that are counted toward the degree must be passed with a grade of C or better.

*** Six (6) credit hours of the required graduate level professional electives must be LAR courses. Students may petition for an exception to this policy if there is a demonstrated academic benefit.

Undergraduate Hours: 53

Graduate Hours: 34

Total Hours Required for Master's: 87-89

Master of Regional and Community Planning

Master of Regional and Community Planning (MRCP) (non-baccalaureate track)

Program Definition

The Master of Regional & Community Planning integrates the concept of comprehensive community development planning in an environmental context with considerations for social, economic, cultural and political issues in the community while recognizing the importance of financial management, private enterprise-government relations, and citizen participation in community decision making. Core courses reflect the impact of these key concerns on traditional planning activities, while exploring related ethical issues in depth.

With a firm educational foundation in basic planning and analytical techniques, management, human relations, and ethics, today's MRCP graduate will have the skills and judgment to become tomorrow's successful practicing planner.

Graduates of our program become directors or managers of community development / city planning departments, economic development agencies, housing or related departments and agencies in cities, small communities, counties and regions. Some graduates may use the same educational background to become directors of planning or related activities in private consulting firms and research organizations, while others may enter the field of real estate development and a host of related disciplines.

Program Mission and Objectives

We prepare graduates to be effective advocates of resilient cities and responsible for community growth and redevelopment. We engage in the exchange of ideas that develop strategic visioning to enhance quality of life in ways that are sustainable, equitable, and accessible to all our citizens. We contribute to the expansion of knowledge through research and its dissemination, outreach to various constituents, and professional education grounded in creative and critical thinking. Students and faculty engage in exploration, analysis, synthesis, and resolution of planning, design and management issues. Our aim is to help communities effectively address challenges related to resource conservation, growing of diverse populations, and continually changing technologies and value systems.

Course Requirements

*A minimum of fourteen (14) general elective credits must be taken. General electives may be taken in pursuit of a minor. They may be taken any time prior to or during the Regional and Community Planning program and may include KSU approved AP, IB, CLEP and transfer credit. Students may not count more than three (3) total hours of recreation credits toward graduation.

Professional Electives must include 6 graduate credit hours of PLAN courses.

All required courses taught in the Landscape Architecture and Regional & Community Planning Programs that are counted toward the degree must be passed with a grade of C or better.

First semester (16 credit hours)

- COMM 105 - Public Speaking IA **Credits: 2**
- ENVD 203 - Survey of the Design, Planning and Community Development Professions **Credits: 1**
- MATH 100 - College Algebra **Credits: 3**
- Humanities/Design Elective* **Credits: 3**
- Social Science/History Elective* **Credits: 3**
- Social Science/Sociology Elective* **Credits: 3**

Second semester (15 credit hours)

- ENGL 100 - Expository Writing I **Credits: 3**
- Humanities/Design Elective* **Credits: 6**
- Natural Science Elective with Lab* **Credits: 4**
- General Elective* **Credits: 2**

Third semester (15 credit hours)

- GEOG 302 - Cartography and Thematic Mapping **Credits: 3**
- PLAN 115 - Introduction to Regional and Community Planning **Credits: 3**
- PLAN 510 - Graphic Composition and Representation for Planning **Credits: 2**

Fourth semester (16 credit hours)

- ENGL 200 - Expository Writing II **Credits: 3**
- GEOG 508 - Geographic Information Systems I **Credits: 4**
- LAR 298 - Ethics and Environmental Dilemmas **Credits: 3**
- PLAN 215 - World Cities **Credits: 3**
- General Elective* **Credits: 3**

Fifth semester (13 credit hours)

- PLAN 010 - Planning Field Trip 1 **Credits: 0**
- PLAN 444 - Career Planning Seminar **Credits: 2**
- PLAN 510 - Graphic Composition and Representation for Planning **Credits: 2**
- PLAN 640 - Urban Design and Development **Credits: 3**
- General Elective **Credits: 6**

Sixth semester (14 credit hours)

KCDC or Study Abroad option:

- PLAN 703 - Off-Campus Studies **Credits: 5**
- Professional Electives **Credits: 9**

Internship Option:

- PLAN 655 - Land Development Planning **Credits: 3**
- PLAN 703 - Off-Campus Studies **Credits: 5**

Seventh semester (12 credit hours)

- PLAN 707 - Writing and Thinking the City **Credits: 3**
- PLAN 720 - Infrastructure and Plan Implementation **Credits: 3**
- PLAN 801 - Knowledge Methods **Credits: 3**
- Professional Elective **Credits: 3**

Eighth semester (14 credit hours)

Thesis Option (13 credit hours):

- LAR 500 - Site Planning and Design **Credits: 3**
- PLAN 020 - Planning Field Trip **Credits: 0**
- PLAN 812 - Planning Theory & Law **Credits: 3**
- PLAN 836 - Plan Making **Credits: 5**
- PLAN 897 - Proposal Writing **Credits: 2-3**

Report Option (14 credit hours)

- LAR 500 - Site Planning and Design **Credits: 3**
- PLAN 020 - Planning Field Trip 2 **Credits: 0**
- PLAN 812 - Planning Theory & Law **Credits: 3**
- PLAN 836 - Plan Making **Credits: 5**
- PLAN 897 - Proposal Writing **Credits: 3**

Ninth semester (12 credit hours)

Thesis Option:

- PLAN 730 - Planning Professional Practice **Credits: 3**
- PLAN 899 - Research in Planning **Credits: 0-18**
- Professional Electives **Credits: 9**

Report Option:

- PLAN 730 - Planning Professional Practice **Credits: 3**
- Professional Electives **Credits: 9**

Tenth semester (11 credit hours)

Report Option (11 credit hours):

- PLAN 705 - Master's Project **Credits: 3**
- PLAN 898 - Master's Report **Credits: 2**
- Professional Electives **Credits: 6**

Thesis Option (12 credit hours):

- PLAN 899 - Research in Planning **Credits: 0-18**
- Professional Elective **Credits: 9**

Undergraduate Hours: 92

Graduate Hours: 46

Total Hours Required for Master's: 138 hours

*A minimum of fourteen (14) general elective credits must be taken. General electives may be taken in pursuit of a minor. They may be taken any time prior to or during the Regional and Community Planning program and may include KSU approved AP, IB, CLEP and transfer credit. Students may not count more than three (3) total hours of recreation credits toward graduation.

Professional Electives must include 6 graduate credit hours of PLAN courses.

All required courses taught in the Landscape Architecture and Regional & Community Planning Programs that are counted toward the degree must be passed with a grade of C or better.

Master of Regional and Community Planning (MRCP) (post-baccalaureate track)

Program Definition

The Master of Regional & Community Planning integrates the concept of comprehensive community development planning in an environmental context with considerations for social, economic, cultural and political issues in the community while recognizing the importance of financial management, private enterprise-government relations, and citizen participation in community decision making. Core courses reflect the impact of these key concerns on traditional planning activities, while exploring related ethical issues in depth.

With a firm educational foundation in basic planning and analytical techniques, management, human relations, and ethics, today's MRCP graduate will have the skills and judgment to become tomorrow's successful practicing planner.

Graduates of our program become directors or managers of community development / city planning departments, economic development agencies, housing or related departments and agencies in cities, small communities, counties and regions. Some graduates may use the same educational background to become directors of planning or related activities in private consulting firms and research organizations, while others may enter the field of real estate development and a host of related disciplines.

Program Mission and Objectives

We prepare graduates to be effective advocates of resilient cities and responsible for community growth and redevelopment. We engage in the exchange of ideas that develop strategic visioning to enhance quality of life in ways that are sustainable, equitable, and accessible to all our citizens. We contribute to the expansion of knowledge through research and its dissemination, outreach to various constituents, and professional education grounded in creative and critical thinking. Students and faculty engage in exploration, analysis, synthesis, and resolution of planning, design and management issues. Our aim is to help communities effectively address challenges related to resource conservation, growing of diverse populations, and continually changing technologies and value systems.

Course Requirements

First semester (12 credit hours)

- PLAN 707 - Writing and Thinking the City **Credits: 3**
- PLAN 720 - Infrastructure and Plan Implementation **Credits: 3**
- PLAN 801 - Knowledge Methods **Credits: 3**
- Professional Elective **Credits: 3**

Thesis Option Courses

Second semester (10 credit hours)

- PLAN 020 - Planning Field Trip **Credits: 0**
- PLAN 812 - Planning Theory & Law **Credits: 3**
- PLAN 836 - Plan Making **Credits: 5**
- PLAN 897 - Proposal Writing **Credits: 2-3**

Third semester (12 credit hours)

- PLAN 730 - Planning Professional Practice **Credits: 3**
Professional Electives **Credits: 6**
- PLAN 899 - Research in Planning **Credits: 0-18**

Fourth semester (12 credit hours)

- PLAN 899 - Research in Planning **Credits: 0-18**
Professional Elective **Credits: 3**
Professional Elective **Credits: 3**
Professional Elective **Credits: 3**

Report Option Courses

Second semester (11 credit hours)

- PLAN 020 - Planning Field Trip **Credits: 0**
- PLAN 812 - Planning Theory & Law **Credits: 3**
- PLAN 836 - Plan Making **Credits: 5**
- PLAN 897 - Proposal Writing **Credits: 2-3**

Third semester (12 credit hours)

- PLAN 730 - Planning Professional Practice **Credits: 3**
Professional Electives **Credits: 9**

Fourth semester (11 credit hours)

- PLAN 705 - Master's Project **Credits: 3**
- PLAN 898 - Master's Report **Credits: 2**
Professional Elective **Credits: 3**
Professional Elective **Credits: 3**

Total Hours Required for Master's: 46

Master of Science

Community Development (MS)

The program serves community leaders, practitioners and those committed to people and places in fields such as community and regional planning, parks and recreation, housing, applied sociology, environmental and social justice, community economic development, cooperative extension services, and non-profit sectors. The community development master's degree program provides the skills, information and networks needed to facilitate sustainable and prosperous community change. It equips practitioners with the tools necessary to build a community in the 21st Century.

This Master of Science in Community Development is a 36-credit hour online collaborative inter-institutional degree program offered through the department of Landscape Architecture and Regional & Community Planning in cooperation with the Innovative Digital Education Alliance (IDEA). Participating universities include Kansas State University, North Dakota State University, and University of Nebraska. Students may enroll in this collaborative program at any of the participating universities. The key distinction between the degrees offered by each university lies in the capstone experience of their graduates. While the program name and degree name may vary by university, the curriculum will be comparable, and courses offered in the program will be the collaborative result of a diverse faculty from within the participating universities.

Program Mission:

The Community Development Program provides professional preparation for career development or advancement. We prepare graduates to address challenges faced by communities across rural to urban United States and other countries. Community Development graduates actively promote positive social, economic, cultural and environmental change and engage citizens in democratic decision-making and action. A diverse faculty from several institutions teaches critical thinking, ethical consideration, careful planning and involvement of all stakeholders.

Program of Study Requirements:

A Program of Study is required to be filed with the Graduate School upon completion of 14 credit hours.

Program Administration:

The MS program in Community Development is officially administered by the Department of Landscape Architecture and Regional & Community Planning, under the auspices of the Graduate School at Kansas State University, and in conjunction with the Institute for Academic Alliances at Kansas State University. The degree is awarded by the Graduate School, through the Department of Landscape Architecture and Regional & Community Planning, College of Architecture, Planning and Design. All courses in this program option are offered online through Global Campus at KSU but may be taught by any of the participating universities. Additional information may be obtained by contacting:

Dr. Huston Gibson
Professor and Department Head
Department of Landscape Architecture and Regional & Community Planning
Kansas State University
1086 Seaton Hall
Manhattan, KS 66506-2909
785-532-5961
larcdept@ksu.edu

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

18 credit hours

Successful completion of the following courses with a minimum overall grade requirement of 3.0:

- CDPLN 700 - Foundations of Community Development **Credits: 3**
- CDPLN 705 - Organizing for Community Change **Credits: 3**
- CDPLN 710 - Community Analysis **Credits: 3**
- CDPLN 715 - Principles and Strategies of Community Change **Credits: 3**
- CDPLN 720 - Community and Regional Economic Analysis **Credits: 3**
- CDPLN 725 - Community and Natural Resource Management **Credits: 3**

Elective Courses

A minimum of 18 credit hours of elective courses is required for the degree. If a student petitions to complete a capstone option other than the final exam, research and proposal hours may count toward the elective requirement.

Total Hours Required for Master's: 36

College of Arts and Sciences

Chris Culbertson, Interim Dean

Scott Tanona, Associate Dean for Academic Affairs

Vacant, Associate Dean for Research

Vacant, Assistant Dean for Student Affairs

Kimathi Choma, Assistant Dean for Diversity and Retention

110 Calvin Hall

785-532-6900

Fax: 785-532-7004

www.k-state.edu/arts

At the heart of every great university is a college that serves as its academic center. The College of Arts and Sciences is the intellectual heart of Kansas State University.

The College of Arts and Sciences contains more than 20 departments and offers a number of special programs and secondary majors. With more than 7,000 students, it has the largest enrollment of any K-State college. It also offers approximately 85 percent of all freshman courses and 65 percent of all credits taught.

Encompassing studies in the natural sciences, social sciences, humanities and fine arts, the College of Arts and Sciences gives you an exciting range of options. You can choose from more than 115 degree programs, study abroad experiences, and pre-professional options.

Arts and Sciences professors are committed to the art of teaching. They combine lectures, labs, and small-group discussions so that even the most complex theories will be within your grasp. And your class projects will test what you're learning--from painting a self-portrait to setting up your own psychology experiment to writing a news report that airs on campus radio.

Our professors are also internationally recognized researchers and scientists, building such world-class programs as a NASA Specialized Center of Research and Training and the Macdonald Laboratory particle accelerator. You can work with distinguished scholars on exciting projects in ecology, gravitation, atomic energy, laser technology, numerical analysis, and cancer research using state-of-the-art facilities and equipment.

Arts and Sciences grads go on to great things. Our students have built an outstanding record of winning prestigious scholarships and gaining acceptance into professional and graduate programs at rates far above the national average. And they have achieved success in careers ranging from medicine to playwriting.

The Arts and Sciences experience, with its provocative courses, respected faculty, and opportunities for individual research, will enable you to follow your interests and pursue your career ambitions.

Dean of Arts and Sciences

Doctor of Philosophy

Security Studies (PHD)

The graduate program in Security Studies is a rigorous, interdisciplinary program intended to prepare its students for careers in research, teaching, and security and international affairs through a broad exploration of social science and historical methodologies as well as topics relating to security issues. Many students will already have a Master of Arts in Security Studies from Kansas State University, but this is not required. Students with other relevant masters degrees may apply to the Ph.D program directly.

Admission Requirements

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Dissertation Requirements

Ph.D comprehensive exams

Comprehensive exams in Security Studies entail a written and oral examination, subdivided into a general field and a special field. The written component of the general field examination is one closed-book, 8-hour exam in the History of International Security, and one closed-book, 8-hour exam in the Politics of International Security (usually, these two exams will occur on successive days or two out of three days). An interdisciplinary Exam Committee of KSU Security Studies faculty, which may vary from year to year, will determine the precise format and administer the written general field exam. The student will be allowed to consult the history and political science reading lists in hardcopy form but will not be permitted to have any notes or other resources available during the examination.

Reading List for History of International Security Exam

Reading List for Politics of International Security Exam

Students should regard the reading lists as indispensable tools to help prepare them to be knowledgeable and independent thinkers. However, examiners also may pose questions on important Security Studies issues not specifically included in the readings. A successful exam does not merely summarize the findings of other scholars; it presents clear and well-argued theoretical arguments supported by the literature but rooted in the student's own ideas.

There is no guarantee that future exams will mirror the format of previous exams. Past general field written exams are available through the links below:

[Spring 2015 exam questions](#)

[Fall 2014 exam questions](#)

Spring 2014 exam questions
Fall 2013 exam questions

The subject of the special field exam is chosen by the student in consultation with his or her PhD adviser and committee. The special field may be geographic in focus (post-Soviet states, Africa, or Latin America, for example) or thematic (civil-military relations, crisis bargaining models, or arms proliferation, for example). The precise format of the special field exam will be determined by the PhD adviser/examiner in consultation with the student's PhD committee.

Dissertation prospectus defense

Following the completion of the Ph.D coursework, the student will submit a written dissertation prospectus to his/her Ph.D Committee. The Committee will provide written feedback on the prospectus. After the student revises the prospectus, he/she will present and defend it orally to the Committee (via live video streaming if necessary). After completion of comprehensive exams and the completion of an acceptable prospectus, the student officially becomes a Ph.D candidate in the program and commences the dissertation.

Writing the dissertation

The student will research and write the dissertation, consulting with the Ph.D Committee as often as necessary. The dissertation should be a substantial and original contribution to knowledge and scholarship.

Research Hours

By decision of the Security Studies faculty committee in consultation with the Dean of the Graduate School, Ph.D. students who are NOT resident in Mnahttan must register for Division of Continuing Education (DCE) research hours.

Dissertation defense

After completing the dissertation, the student will defend it orally before the Ph.D Committee (again, via live video streaming if necessary).

Submission of dissertation

Upon successful completion of the oral defense, the student will make any additional revisions to the dissertation required by the Ph.D Committee and submit the final version of the dissertation to the Graduate School at KSU.

Ph.D committee

Within their first two semesters in the program, students will choose a Ph.D Committee consisting of at least four members of the KSU Security Studies faculty, including at least one member from History and at least one member from Political Science. As in any graduate program, adjunct professors are eligible to serve on committees. This committee will work with the student to craft an appropriate and feasible dissertation topic and advise the student on suitable coursework and preparation. Students will report to their committee at regular intervals. The Ph.D Committee may require the student to master specific research skills appropriate for the dissertation, including foreign languages or quantitative methods.

Course Requirements

The Ph.D degree will require 90 hours of course work. The Ph.D. committee will judge the suitability and applicability of the previous credits. An additional 30 hours of those 90 will be research hours towards the dissertation. The remaining coursework to reach the total of 90 hours will include 15 hours of required courses. The required courses consist of:

1. The Historical Research Sequence.

This sequence consists of two courses of three hours each. The first will study various approaches to the history of security, international relations, and military affairs. The second will be a methodology course in the theory and concrete practice of historical research in security studies.

- HIST 911 - Historical Approaches to Security **Credits: 3**
- HIST 912 - Historical Methods in Security Studies **Credits: 3**

2. The Political Research Sequence.

This sequence also consists of two courses. The first, Research Design and Qualitative Methods, focuses on the construction of social science research and the various research design issues students must understand to construct qualitative social science studies. The second course, Quantitative Methods, will introduce students to the statistical tools used by political scientists studying international security issues.

- POLSC 900 - Advanced Research Methods I **Credits: 3**
- POLSC 901 - Advanced Research Methods II **Credits: 3**

3. The final PhD-level required course

The final PhD-level required course must be taken after completing the history and political science two course research sequences. Each student must complete a directed reading with the chair of the student's Ph.D committee. The course is intended to allow the student to hone his or her dissertation topic in one-on-one consultation with the PhD chair.

- HIST 985 - Readings in History **Credits: 1-3**
- OR
- POLSC 985 - Readings in Security Studies **Credits: 1-6**

Notes

The other fifteen hours of coursework will be elective courses chosen in consultation with the Ph.D committee to prepare the student for research and teaching in security studies, as well as to help prepare for the Ph.D exams. These electives may be drawn from History, Political Science, or from other disciplines deemed appropriate by the committee.

The intent of the Ph.D coursework is to prepare students for writing the dissertation. Upon completion of the Ph.D coursework students will have the research skills necessary to complete a dissertation-length scholarly study on a well-defined topic developed in consultation with their PhD Chair.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Arts

Security Studies (MA)

The graduate program in Security Studies is a rigorous, interdisciplinary, and professionally-oriented program of graduate studies. The resulting degree provides a broad, analytical perspective on national and international security issues while maintaining academic standards in accord with existing MA degrees in History and Political Science. Coursework concentrates on issues of strategy, politics, economics, and society from both historical and social science perspectives. A minimum of 30 credits is required.

Committees

Each student will be supervised by a master's committee consisting of three members of the Security Studies graduate faculty. As in any graduate program, adjunct professors are eligible to serve on committees. For students at Fort Leavenworth, the MA committee will normally be made up of the Director of Security Studies and the two faculty members teaching POLSC 810 / POLSC 815.

Course Requirements

Course requirements will consist of 30 hours of graduate-level work, up to 12 hours of which may be transfer credit from other graduate-level work. Students at Fort Leavenworth for ILE can normally transfer those 12 hours from their ILE work. The admissions committee will evaluate the suitability of transfer credits from other institutions. The remaining hours will consist of 18 hours of required courses and additional graduate-level electives as needed to total 30 hours.

The coursework only option for this program does not require a culminating experience.

1. Required: Fundamentals of Security (3 credit hours)

This course will introduce students to major themes covered in the M.A. program of study. It is designed to provide students with foundations for the other core courses and so must be completed in the first term of student enrollment. Students will read key texts on international security, military history, and strategy, as well as works on the theory and research practice of history and political science. They will write essays on the assigned readings, participate in on-line synchronous and asynchronous discussions, and compose a final paper or take a final exam on the issues raised by the course.

- POLSC 812 - Foundations of Security Studies **Credits: 3**

2. Required: Security Studies Methodology (2 credit hours)

This course is a rigorous exploration of interdisciplinary methods in history and political science.

- POLSC 810 - Security Studies Methodology **Credits: 2**
- HIST 810 - Security Studies Methodology **Credits: 2**

3. Required: History and Security of Pivotal Regions (6 credit hours)

Students will take at least two courses on the history of regions of central importance to international affairs. These courses may focus on East Asia, Latin America, the Middle East, or other strategic areas.

- HIST 850 - History and Security: East Asia **Credits: 3**

- HIST 851 - History and Security: Latin America **Credits: 3**
- HIST 852 - History and Security: the Middle East **Credits: 3**
- HIST 853 - History and Security: Russia/Central Asia **Credits: 3**
- HIST 854 - History and Security: South Asia **Credits: 3**
- HIST 855 - History and Security: Modern Africa since 1850 **Credits: 3**
- HIST 860 - Topics in International History **Credits: 3**

4. Required: International Security and Transnational Security (6 credit hours)

Political Science will offer two courses. International Security will focus on traditional issues of the causes of war, deterrence, the relevance/role of international institutions, arms proliferation, the politics of international intervention, and conflict resolution. The second, Terrorism and Transnational Security, will cover security issues that have been given increasing emphasis over recent years. Examples include the unique context of security problems in the developing world, demographic developments and internal/external conflict, environmental issues and their relation to security, economic globalization and security, post-conflict reconstruction, and humanitarian emergencies.

- POLSC 813 - International Security **Credits: 3**
- POLSC 814 - Terrorism and Transnational Security Issues **Credits: 3**

5. Required: Research Design in Security Studies (1 credit hour)

This course is a study of research methods in history and political science culminating in a piece of original research in Security Studies.

- HIST 815 - Research Design in Security Studies **Credits: 1**
- POLSC 815 - Research Design in Security Studies **Credits: 1**

Thesis Option Courses

Students completing the thesis option will take 24 credit hours of coursework consisting of the 18 credit hours of required courses and six credit hours of electives. They will also take six credit hours of Master's Research in either Political Science or History.

- POLSC 899 - Master's Thesis **Credits: 6**
- OR
- HIST 899 - Master's Research in History **Credits: 1-18**

Total Hours Required for Master's: 30

Art

Shreepad Joglekar, The Lindy E. Bell Head of the Department of Art
Nancy Morrow, Graduate Program Director

111 Willard Hall
 785-532-6605
 Fax: 785-532-0334
art@k-state.edu

<http://art.ksu.edu/grad/admission.html>

The Department of Art offers a 60-hour graduate program leading to the Master of Fine Arts degree. As established by the College Art Association and accepted by all accredited universities, the Master of Fine Arts degree is the terminal degree in studio art practice and is equivalent to terminal degrees in other fields, such as the Ph.D. or Ed.D. The intent of the M.F.A. Program is to educate students for professional careers as artists and designers or as college and university teachers of the visual arts.

First and foremost, the profession demands from the recipient of the M.F.A. degree the ability to produce technically and conceptually accomplished and engaging art. When work toward the M.F.A. is concentrated in a particular medium, professional mastery of that medium is expected. A generalist, with less specialized practice, must still meet the critical demands of the profession by demonstrating expertise and knowledge in several areas. In any case, the need for thorough training of the mind, the eye, and the hand is self-evident.

Admission procedures

For information regarding admission procedures, please see the Department of Art website at <http://art.ksu.edu/grad/admission.html>.

Entrance requirements

To be admitted as a graduate student in the M.F.A. program, the applicant must have a B.A., or B.F.A. degree from an accredited institution, adequate undergraduate education in the visual arts, and an undergraduate average of B (3.0) or better in the last six semesters of their university coursework. The applicant will ideally have at least 60 undergraduate semester credit hours in visual arts, with a minimum of 20 semester hours in the area of concentration.

All international students applying to the M.F.A. program must meet the same level of achievement as U.S. students.

Applicants with the M.A. degree

Students with an M.A. degree from an accredited institution who wish to apply for the M.F.A. program at Kansas State University should follow the same general application procedures outlined above.

Students who hold an M.A. degree may apply up to 10 hours of that degree toward an M.F.A. with approval from the Department of Art before starting the program. The number of hours accepted will depend on the relevance of the course work to the M.F.A. After the applicant has been accepted into the M.F.A. program, the Graduate Program Director will meet with the department's Graduate Studies Committee, the proposed major professor and the coordinator of the student's studio area to evaluate the student's transcript and to determine the number of credits that may be applied to the M.F.A. degree.

Master of Fine Arts

Master of Fine Arts (MFA)

The Master of Fine Arts at Kansas State University is a terminal degree program, accredited by the National Association of Schools of Art and Design (NASAD). The M.F.A. provides students with the competency and experience to have successful careers as professional artists and designers, to teach in higher education, and to pursue a variety of other art related occupations. Inquiry begins from the standpoint of a focus area that is then paired with exploratory studio, research of current and historical contexts, and multiple opportunities for exchange of ideas. Focus areas include ceramics, drawing, digital/experimental media (D/X media), painting, printmaking, photography, metalsmithing and jewelry, sculpture, and visual communication design. Studio practice that extends beyond one area into other art disciplines is encouraged.

Housed in the Department of Art, M.F.A. students receive in-depth mentorship from Graduate Faculty members, who in addition to teaching, are active in exhibiting, performing client work, engaging in social practice, or publishing. Students in the program are expected to be in residence working in their studio on campus each semester of the academic year, for the duration of their program.

Graduation Requirements

Graduate Exhibition and Final Exam

The M.F.A. is a degree program that culminates in a final, solo graduate exhibition. This exhibition includes a substantial body of original works and is exhibited on campus during the final semester of the student's program.

An accompanying written document is required in which the candidate demonstrates proficiency in analyzing, interpreting and organizing material, and provides evidence of the ability to communicate perceptions, insights, and conclusions. A digital portfolio of the graduate exhibition and related written materials is required and will be kept by the Department of Art as documentation. Satisfactory completion of both the visual and written portions of the graduate exhibition is required for the awarding of the M.F.A. degree.

The final oral examination for the M.F.A. degree will be taken when the student is in the final semester of completing their program of study, has installed his or her graduate exhibition, and has delivered a copy of the written document to each member of the supervisory committee.

Course Requirements

The graduate course requirements for the M.F.A. consist of 60 credit hours, normally distributed over six semesters of the three-year program. M.F.A. program students are expected to be in residence working in their studio on campus each semester of the academic year, for the duration of their program. The 60 credits include courses in art history and cognate areas of study. Required program credits may not include course work that is necessary to resolve undergraduate deficiencies.

Studio Art Studies: 39 credit hours

Choose any 600-level or above ART studio art courses.

- Studio Art Focus Area **Credits:** 24-36
- Studio Art Exploration (Non-Focus Area) **Credits:** 3-15

Academic Studies: 12 credit hours

- Any ART art history courses 600-level or above **Credits:** 6
- ART 826 - Graduate Seminary **Credits:** 3
- ART 887 - Contemporary Art Theory and Criticism **Credits:** 3

Electives: 9 credit hours

Choose courses at 600-level or above.

Courses outside the area of emphasis should be taken from faculty other than the major professor, in order to get as much experience as possible with other members of the Graduate Faculty. Students are also encouraged to take a portion or all of their free electives outside the Department of Art.

Each student's program of study is subject to the approval of their major professor and supervisory committee. This is a Graduate School and departmental policy, not a student's option.

Total Hours Required for Master's: 60

Biochemistry and Molecular Biophysics

Michal Zolkiewski, Head

Timothy Durrett, Director of graduate studies

Om Prakash, Admissions Chair

141 Chalmers Hall

785-532-6121

Fax: 785-532-7278

gbiochem@ksu.edu

<http://www.k-state.edu/bmb/>

Biochemistry and Molecular Biophysics is an interdepartmental graduate program with faculty participants from many academic departments of the University.

Overview

Biochemistry and Molecular Biophysics explores the molecular basis of life processes. It examines structure, function, assembly, and dynamic changes of macromolecules and the chemistry and dynamics of small molecules. Through use of recombinant DNA technology and new instrumentation, a revolution is underway in our understanding of the ways that plants and animals regulate metabolic processes and express genetic information. Researchers at Kansas State University are in the forefront of that revolution. The study of biochemistry at Kansas State University is conducted under a versatile arrangement through which faculty of the Department of Biochemistry and Molecular Biophysics and faculty in other departments cooperate in a graduate biochemistry program. Both fundamental questions about living processes and applications to living systems are supported in this interdisciplinary program.

Degree programs

The biochemistry and molecular biophysics program seeks excellence in teaching and research through a program tailored to the development of the individual student. The core curriculum is broad and students are expected to specialize through appropriate choice of advanced courses from the many offerings taught by faculty in their areas of research expertise. A strong seminar program involves presentations by eminent visiting scholars from around the world and by the faculty of many departments on campus. A graduate student seminar program provides further opportunity for acquiring insights into new developments in the field.

The Graduate Biochemistry and Molecular Biophysics Group administers granting of M.S., B.S./M.S., and Ph.D. degrees in biochemistry whether the research is conducted within the Department of Biochemistry or in other cooperating departments. The program of study is flexible, accommodating students with a wide range of backgrounds, including genetics, microbiology, physics, and medicine as well as the traditional chemistry, biochemistry, and biology degrees. Students are admitted to either the M.S. or the Ph.D. program based on qualifications, which include undergraduate and graduate performance, letters of recommendation, and program of study deficiencies.

In biochemistry and molecular biophysics, both the Ph.D. and the M.S. degrees are considered research degrees. Thus, in addition

to specific course requirements, there is a requirement for writing a thesis based on independent and original research conducted in the laboratory of one of the participating faculty members.

Students in either the M.S. or Ph.D. degree program take the two-semester, comprehensive, core biochemistry courses Biochemistry I and II and a one-semester course in molecular biophysics. All students are expected to attend the weekly graduate student seminar and individual research group meetings.

Financial support of graduate students

Within the Department of Biochemistry and Molecular Biophysics, support for graduate teaching assistants is through the College of Arts and Sciences. Graduate research assistants are supported through the Agricultural Experiment Station and by research grants. Usually a student is admitted to the graduate program in biochemistry and molecular biophysics only if university funds are available for salary support or if the student has another source of support such as a government (U.S. or other) fellowship. U.S. citizens with a strong undergraduate record can apply for NSF predoctoral fellowships. Some supplements to teaching and research support are available on a competitive basis from the Graduate School for outstanding U.S. students.

Incoming students receive half of their support in the form of teaching assistantships (requiring six contact hours per week) and half in the form of a research assistantship. After the first year, the teaching assistantship may be replaced by extramural support. This is expected for Ph.D. candidates beyond their third year of study.

Graduate students in the B.S./M.S. dual degree program will not be expected to teach and will not be supported by departmental teaching or research assistantships. They are eligible for support as research assistants in laboratories of individual faculty members.

Student fees

For graduate teaching assistants and graduate research assistants, student fees are assessed at the instate level. Students receiving such support are required to enroll in 6 credit hours each semester. A waiver of half the tuition costs is provided to those supported as combined graduate teaching/research assistants.

Research environment and facilities

More than two dozen faculty members are formally associated with the Graduate Biochemistry and Molecular Biophysics Group. Many others with interests in biochemistry and molecular biology are collaborative investigators and participants on graduate student supervisory committees. The research environment in biochemistry is exciting and vigorous because of these diverse but interacting programs. Our graduates compete favorably with those from the world's best programs because they are well trained in biochemical literature and research techniques. Members of the group currently receive more than \$3 million per year in outside research funds. These funds support technicians, postdoctoral fellows, and some graduate research assistants at later stages of their career. They also allow purchase of up-to-date research equipment and supplies.

The Department of Biochemistry and Molecular Biophysics has 14 large research suites. Ten are located in Chalmers Hall. That building also houses the department's teaching laboratories. The other research suites are located in Burt Hall. The department is well equipped for advanced research in a wide range of areas. NMR studies are conducted within the NMR Facility using Varian 500 MHz Unity Plus NMR with triple channel detection, pulsefield gradient, and high stability temperature control and waveform generation. Other biophysical studies are conducted with conventional and magnetic circular dichroism, fluorescence spectroscopy with fluorescence polarization capability and UV-Visible differential scanning spectroscopy. A new analytical ultracentrifuge (Beckman XL-I), micro calorimeters (MicroCal VP-DSC and isothermal titration calorimeter), and a surface plasmon resonance instrument (Biacore 3000) enhance studies of macromolecule interactions and folding properties.

The department has equipment and technical capability for gene cloning (supported by polymerase chain reaction capabilities) and all varieties of electrophoresis experiments. For preparative procedures the department has multiple ultracentrifuges, high performance liquid chromatographs, and facilities for both anaerobic enzyme preparations and large scale preparations of subcellular organelles. The department has several cold rooms, animal cell culture facilities, instrument rooms, and dark rooms.

Facilities are available for housing animals and growing plants year-round. Analytical instruments include scintillation counters, gamma counters and scanning spectrophotometers.

The university Biotechnology Core Facility is housed within the Department of Biochemistry and Molecular Biophysics and provides both instruments and expertise for mass spectrometry of biopolymers, oligonucleotide synthesis, peptide synthesis and gas-phase peptide sequencing. High resolution purification of peptides and synthesis of peptides containing non-natural amino acids are areas of special interest. The mass spec capabilities include high throughput screening of peptides.

Additional facilities are also available on campus: DNA sequencing, fluorescence-activated cell sorting, electron microscopy (transmission and scanning), quasi-elastic light scattering, GLC-mass spectrometry, emission spectrometry, Fourier-transform infrared spectrometry, atomic absorption and stopped flow kinetics. High resolution GLC- mass spec is used for lipidomics studies. Parallel computing, mini super-computers, and ethernet and internet networks are available throughout the campus.

Job opportunities

Biochemistry and molecular biology are growth areas in the economy of the 21st century. Graduate training in biochemistry and molecular biophysics provides a strong base for varied academic and technological careers. Our Ph. D. and postdoctoral graduates find positions not only in departments of biochemistry, biophysics, and molecular biology, but also in biology, chemistry, pharmacology, nutrition and medicine. Doctoral graduates find positions requiring independent work in a wide range of industries including biotechnology, chemistry, pharmacology, medicine, and food technology. M.S. graduates occupy skilled technical positions in industry, government and academic research laboratories. Many also continue for the Ph.D. at this or other institutions.

Accelerated

Accelerated Biochemistry (BS)/Biochemistry (MS)

The accelerated Accelerated Biochemistry (BS)/Biochemistry (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biochemistry degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Biochemistry (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOCH 755 - Biochemistry I **Credits: 3**
- BIOCH 765 - Biochemistry II **Credits: 3**
- BIOCH 775 - Molecular Biophysics **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Biochemistry (PHD)

The science of biochemistry

Biochemistry explores the molecular basis for life processes through chemical and physical studies on the structure and behavior of complex molecules found in biological materials. Biochemistry has emerged as a highly creative and successful discipline that has developed many new technologies and broadly applies the technological advances of other disciplines. Through characterizing the structure, function, assembly, and dynamic changes of macromolecules, biochemists seek to answer fundamental questions about living processes (basic research) and to bring to fruition significant improvements in the quality of life and medical care (applied research). The great complexity and endless variety of biological systems, together with the need for broad explorations, assure that imaginative research will continue in the field of biochemistry for the foreseeable future.

Graduate program approach

The biochemistry program seeks excellence in teaching and research through a program tailored to the development of the individual student. The Biochemistry and Molecular Biophysics Graduate Group administers granting of M.S. and Ph.D. degrees in biochemistry whether the research is conducted within the Department of Biochemistry and Molecular Biophysics or in other cooperating departments. The program of study is flexible, accommodating students with a wide range of backgrounds, including genetics, microbiology, physics, and medicine as well as the traditional chemistry, biochemistry, and biology degrees. The graduate program is structured to aid students in the successful completion of their graduate training in biochemistry by providing access to leading researchers in biochemistry and related fields, offering a core curriculum, seminars, and teaching and research opportunities.

Admission Requirements

Applicants must have a bachelor's degree from an accredited institution, appropriate and adequate course work, and an average of B or better in the junior and senior years or an excellent postgraduate record at another institution. Provisional admission may occur when there are limited deficiencies in undergraduate course work that can be removed by course work taken at Kansas State University or when there is uncertainty in evaluation of transcripts, as may occur in the case of international students. In the latter case, removal of the provisional status occurs upon the accumulation of 9 hours of course work with a B or better average.

Undergraduate and postgraduate credits should include analytical, organic, and physical chemistry, calculus, physics, and a semester of biology including a laboratory. Physical chemistry may be completed as part of an M.S. or Ph.D. program, but all other deficiencies must be completed without graduate credit. No foreign language is required.

All applicants are required to take the Graduate Record Exam and submit their scores with the application.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

International students

A minimal score of 550 on the written Test of English as a Foreign Language (TOEFL) or 79 on the Internet-based TOEFL (IBT) is required for admission to the Graduate School for any student whose native language is not English. Because beginning graduate students in biochemistry are appointed as combined teaching/research assistants, a Test of Spoken English (TSE) score of 50 of 60 is required by the Kansas Board of Regents. The test may be taken in the U.S. or abroad.

Course Requirements

The Graduate School requires at least three years of two semesters each of graduate study (equivalent to 90 semester hours) beyond the bachelor's degree and a dissertation for the degree of Doctor of Philosophy. Approximately 30 to 40 hours of course work are required for the Ph.D. in addition to research for a satisfactory dissertation. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Admission to candidacy for the Ph.D. requires satisfactory performance in the two core biochemistry courses, and defense of a research proposal on a topic selected by the student in consultation with their supervisory committee. This defense serves as the preliminary examination for admission to candidacy for the Ph.D.

Required Courses

In addition to the required biochemistry courses, 10 credit hours of biology courses are required, and advanced chemistry or physics courses are encouraged. Two credits must be obtained in the Graduate Biochemistry Seminar (BIOCH 806).

- BIOCH 806 - Biochemistry Seminar Credits: 0-1

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Biochemistry (MS)

Offered through the Biochemistry and Molecular Biophysics graduate program.

Biochemistry explores the molecular basis for life processes through chemical and physical studies on the structure and behavior of complex molecules found in biological materials. Biochemistry has emerged as a highly creative and successful discipline that has developed many new technologies and broadly applies the technological advances of other disciplines. Through

characterizing the structure, function, assembly, and dynamic changes of macromolecules, biochemists seek to answer fundamental questions about living processes (basic research) and to bring to fruition significant improvements in the quality of life and medical care (applied research). The great complexity and endless variety of biological systems, together with the need for broad explorations, assure that imaginative research will continue in the field of biochemistry for the foreseeable future.

Admission Requirements

Applicants must have a bachelor's degree from an accredited institution, appropriate and adequate course work, and an average of B or better in the junior and senior years or an excellent postgraduate record at another institution. Provisional admission may occur when there are limited deficiencies in undergraduate course work that can be removed by course work taken at Kansas State University or when there is uncertainty in evaluation of transcripts, as may occur in the case of international students. In the latter case, removal of the provisional status occurs upon the accumulation of 9 hours of course work with a B or better average.

Undergraduate and postgraduate credits should include analytical, organic, and physical chemistry, calculus, physics, and a semester of biology including a laboratory. Physical chemistry may be completed as part of an M.S. or Ph.D. program, but all other deficiencies must be completed without graduate credit. No foreign language is required.

All applicants are required to take the Graduate Record Exam (GRE) and submit their scores with the application.

International Applicants

A minimal score of 550 on the written Test of English as a Foreign Language (TOEFL) or 79 on the Internet-based TOEFL (IBT) is required for admission to the Graduate School for any student whose native language is not English. Because beginning graduate students in biochemistry are appointed as combined teaching/research assistants, a Test of Spoken English (TSE) score of 50 of 60 is required by the Kansas Board of Regents. The test may be taken in the U.S. or abroad.

Course Requirements

For the M.S. degree, the Graduate School requires a minimum of 30 semester hours of graduate credit, which includes a master's thesis based on 6-8 credit hours of research. In addition to the required biochemistry courses, one credit must be obtained in the Graduate Biochemistry Seminar (BIOCH 806).

Required Course

- BIOCH 806 - Biochemistry Seminar **Credits:** 0-1

Total Hours Required for Master's: 30

Biology

Mark Ungerer, Director

Michael Veeman, Director of graduate studies

116 Ackert Hall

785-532-6615

Fax: 785-532-6653

mcungere@ksu.edu

<http://www.ksu.edu/biology/>

For more detailed information on faculty research interests, see <http://www.k-state.edu/biology/people/tenure/index.html>.

Programs

Biology and Microbiology are broad and innovative disciplines, and our graduate program reflects both of these characteristics. Our faculty members are research scientists with a breadth and depth of research expertise, and they apply that expertise in their roles as graduate mentors. The graduate faculty members of the Division of Biology strongly believe that independent research is the preeminent feature of our graduate programs. Research expertise represented within the Division of Biology ranges from studies of cell development and cell signaling to the influence of grazers and fire with plant and animal communities on the tallgrass prairie. Graduate opportunities are available in all areas of biology, including molecular, cellular and developmental biology; community, ecosystem and landscape ecology; wildlife biology; cancer biology; microbiology; virology; immunology; parasitology; and genetics.

In partnership with a major professor and a supervisory committee, each graduate student develops an individualized program of study, consisting of course work and laboratory or field research. Each program of study is tailored to meet the specific needs of the individual student. Unlike more formal curricula with rigid requirements, our flexible approach allows students to pursue their professional goals more efficiently and more effectively. All beginning graduate students are required to take BIOL 863 (Professional Skills in Biology), where they learn about grant-writing, presentation skills, research ethics, effective instructional techniques, and other skills that will be useful to them throughout their careers as professional scientists. This course is the only required course; all other courses are chosen in consultation with the advisory committee. A minimum of 30 credit hours beyond the bachelor's degree is required to earn a master's degree; a minimum of 90 credit hours beyond the bachelor's degree is required to earn a doctoral degree. In addition, we require that each student write a thesis or dissertation based on their original research; this work should be of sufficient quality and importance to merit publication in a refereed journal. For additional details regarding responsibilities and expectations for our graduate students, see <http://www.ksu.edu/biology/grad/responsibilities.html>.

Facilities

Graduate research and education takes place primarily in four on-campus sites--Ackert Hall, Bushnell Hall, Chalmers Hall, and Leasure Hall--as well as at the off-campus site of the Konza Prairie Biological Station.

Ackert Hall

Ackert Hall is the main biology facility, containing 130,000 square feet of research and instructional space. Ackert Hall provides modern, well-equipped laboratories for teaching and research, and, contains the Division offices, a rooftop greenhouse, an electronics shop, a research supply storeroom, and animal care facilities. Equipment available for research includes ultracentrifuges, growth chambers, a research microscope facility (with confocal and transmission electron microscope plus image processing capabilities), mass spectroscopy facilities, and many other research and support equipment items that are required for a modern biology research program. Research labs overseen by faculty members in all three of our sections (see above) can be found in Ackert Hall.

Bushnell Hall

Graduate faculty members with an interest in ecological studies have offices and laboratory space in Bushnell Hall. Included in this building are the herbarium, environmental chambers, dark rooms, analytical laboratories, and tanks for fish culture ranging from 100- to 2,000-liter capacity. Extensive computing and imaging facilities support the climatologic and remote sensing activities.

Chalmers Hall

Chalmers Hall was completed in November 2002 and is adjacent to Ackert Hall. This modern facility houses ten Division of Biology faculty and research programs in 12,300 square feet on the second floor of the building. Faculty members with laboratories in Chalmers Hall have research interests in developmental biology, immunology, virology, bioinformatics, ecological genomics, and vector biology.

Leasure Hall

Leasure Hall houses the Kansas Cooperative Fish and Wildlife Research Unit. This unit is a partnership of the U.S. Department of the Interior, Kansas State University, the Kansas Department of Wildlife and Parks, and the Wildlife Management Institute. Two U.S. Department of the Interior employees, with appointments as Division of Biology adjunct graduate faculty members, oversee fisheries and wildlife research programs as part of their duties in the Kansas Cooperative Fish and Wildlife Research Unit.

Konza Prairie Biological Station

The Konza Prairie Biological Station is located only a few miles south of the main KSU campus, allowing for ease of access for faculty members and graduate students working there. This station contains approximately 8,616 acres of native tall grass prairie, and has been set aside by the Nature Conservancy as a unique outdoor laboratory for long-term research. This land was purchased with funds provided by Katharine Ordway, and leased to the Division of Biology by the Nature Conservancy. Experimental manipulations of the landscape, involving grazing and/or burning, allow researchers to focus on patterns and processes which might be important in maintenance of the tall grass prairie ecosystem.

Research strengths

The graduate faculty members of the Division of Biology have a proven track record in scientific achievement, and they continue to excel in competition for extramural research funding. Our research programs are funded by the state of Kansas, via support from the Kansas Agricultural Experiment Station and Kansas Wildlife and Parks, and by direct grants to our faculty members from a diverse group of agencies and foundations, including the National Science Foundation, the National Institutes of Health, the Environmental Protection Agency, the Department of Interior, the Department of Energy, DOD, the American Heart Association, the American Cancer Society, as well as others. Areas of particular research strength, which provide collaborative research opportunities for our graduate students, include:

Long-Term Ecological Research

The National Science Foundation has supported Division of Biology research activities on the Konza Prairie continuously since 1980. This long-term approach is designed to investigate gradual and subtle changes in microbe, plant and animal diversity and numbers on the tall grass prairie, the impact of human activities on ecosystem productivity, and changes in ecological processes caused by burning and/or grazing.

Kansas Lipidomics Research Center

The Kansas Lipidomics Research Center is a collaborative venture of scientists in the Division of Biology, in the Department of Biochemistry and Molecular Biophysics, and at the University of Kansas. The Center performs comprehensive, quantitative profiling of lipid molecular species with high sample throughput, using mass spectrometry and other innovative technologies. Diversity and concentrations of lipid metabolites in genomically altered and physiologically manipulated organisms are investigated in order to identify the functions of genes that encode proteins involved in lipid metabolism. The Center is also dedicated to improving lipid analytical technologies, to promoting collaborative research among lipid scientists, and to providing training opportunities for post doctoral, graduate, and undergraduate students. More information is available at <http://www.k-state.edu/lipid/lipidomics/>.

Ecological Genomics

The Ecological Genomics initiative is an interdisciplinary research enterprise, aimed at exploring the genetic bases for organismal responses to the environment. Students involved in the program engage in a truly multidisciplinary program, working with faculty members in ecology and molecular biology/genetics. These research efforts employ functional genomic techniques to probe the interface between ecology and genetics. More information about the Kansas Ecological Genomics collaborative research groups can be found at <http://www.ksu.edu/ecogen/>.

Other multi-investigator research initiatives

Information about many other exciting collaborative research efforts can be found at <https://www.k-state.edu/biology/research/interdisciplinary.html>

Admission and financial support

For detailed information on admission and financial support, see <http://www.k-state.edu/biology/grad/index.html>.

Accelerated

Accelerated Biology - Animal Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Animal Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 612 - Freshwater Ecology **Credits: 4**
- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 682 - Fish Ecology **Credits: 3**
- BIOL 684 - Wildlife Management and Techniques **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biology - Cellular and Molecular Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Cellular and Molecular Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 609 - Cellular and Molecular Biology of Human Diseases **Credits: 3**
- BIOL 670 - Immunology **Credits: 3**
- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biology - Computational Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Computational Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 687 - Microbial Ecology **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**
- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biology - Ecology and Evolutionary Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Ecology and Evolutionary Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Insert Link to Master Program Name (Degree Type) from the approved curriculum/catalog

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 612 - Freshwater Ecology **Credits: 4**
- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 682 - Fish Ecology **Credits: 3**
- BIOL 687 - Microbial Ecology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biology - Human Health Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Human Health Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.

- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 609 - Cellular and Molecular Biology of Human Diseases **Credits: 3**
- BIOL 670 - Immunology **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**
- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biology - Integrative Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Integrative Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.

- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**
- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biology - Plant Biology (BS)/Biology (MS)

The accelerated Accelerated Biology - Plant Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

To enter this program a student must be nominated by a Biology graduate faculty member who also will serve as the student's major professor. The nomination can take place any time from the second semester of the sophomore year through the second semester of the junior year when he/she has accumulated 75 credit hours toward the Bachelor degree. By the time of nomination, students must have completed at least one course from each of the following two blocks: Block 1 – [BIOL 221, BIOL 255], Block 2 – [BIOL 398, BIOL 520, BIOL 529], his/her math requirement, and at least two semesters of chemistry. A student may be nominated during the senior year with special permission from the chair of the Biology Graduate Affairs Committee

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 612 - Freshwater Ecology **Credits: 4**
- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology – Conservation Biology(BS)/Biology(MS)

The accelerated Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology - Conservation Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 682 - Fish Ecology **Credits: 3**
- BIOL 684 - Wildlife Management and Techniques **Credits: 4**
- BIOL 696 - Fisheries Management and Techniques **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology – Environmental Biology(BS)/Biology(MS)

The accelerated Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology - Environmental Biology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science

in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 612 - Freshwater Ecology **Credits: 4**
- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 684 - Wildlife Management and Techniques **Credits: 4**
- BIOL 687 - Microbial Ecology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology – Fisheries Ecology and Management(BS)/Biology(MS)

The accelerated Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology - Fisheries Ecology and Management (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 612 - Freshwater Ecology **Credits: 4**
- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 682 - Fish Ecology **Credits: 3**
- BIOL 696 - Fisheries Management and Techniques **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology – Wildlife Ecology and Management(BS)/Biology(MS)

The accelerated Accelerated Fisheries, Wildlife, Conservation, and Environmental Biology - Wildlife Ecology and Management (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 640 - Population Biology **Credits: 3**
- BIOL 642 - Principles of Conservation Biology **Credits: 3**
- BIOL 682 - Fish Ecology **Credits: 3**
- BIOL 684 - Wildlife Management and Techniques **Credits: 4**
- BIOL 687 - Microbial Ecology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Microbiology – General Microbiology (BS)/Biology(MS)

The accelerated Accelerated Microbiology - General Microbiology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Biology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 670 - Immunology **Credits: 3**
- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**
- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Microbiology – Medical Microbiology(BS)/Biology(MS)

The accelerated Accelerated Microbiology - Medical Microbiology (BS)/Biology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.

- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Insert Link to Master Program Name (Degree Type) from the approved curriculum/catalog

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BIOL 609 - Cellular and Molecular Biology of Human Diseases **Credits: 3**
- BIOL 670 - Immunology **Credits: 3**
- BIOL 675 - Genetics of Microorganisms **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Biology (PHD)

The Ph.D. program in Biology provides advanced training in numerous biological subdisciplines including ecology, evolution, physiology, genetics, genomics, molecular biology, developmental biology, and cell biology. The program trains students to be independent, rigorous, and creative life scientists in preparation for careers in research, teaching, industry, and government.

The Ph.D. in Biology requires a minimum of 90 credit hours, including at least 24 credit hours of graded coursework and at least 30 hours of BIOL 998 (Ph.D. Research in Biology). Students work closely with faculty mentors to develop major laboratory and/or field-based research projects. Most students will publish multiple peer-reviewed research papers that form the basis for their doctoral dissertation.

Optional Rotations

Applicants can be recruited directly into a specific faculty member's research program but also have the option of doing laboratory rotations. Rotating students do short projects in 2-3 different labs during their first semester to explore different research opportunities and find the best fit for their interests. Applicants with interests in Ecology, Evolutionary Biology, Conservation Biology, and similar fields typically apply to work with a specific faculty mentor but will occasionally do rotations.

Rotations are common but not mandatory for students with interests in Genetics, Molecular Biology, Cell Biology, Developmental Biology and related fields.

Admission Requirements

Applicants must have a 4-year bachelor's degree. An average of B or higher in the final 60 hours of undergraduate coursework (3.0/4.0 on a 4-point scale or equivalent) is required for regular admission, but applicants with lower GPAs can potentially be admitted on probationary status. Preference is given to applicants with undergraduate degrees in biology or other life sciences. Applicants with undergraduate degrees in other disciplines should have extensive life science coursework or other evidence of biology fundamentals. Prior research experience is essential. A key issue in admissions decisions is a good match with the research interests of one or more Biology faculty members who could serve as the applicant's Major Professor. Prospective applicants are encouraged to contact potential mentors to discuss opportunities in their research programs.

Applications must include transcripts, contact details for three professional references, and a personal statement of goals and experiences. The personal statement should discuss career goals and past research experience, and it should explain how the applicant's research interests are aligned with the research programs of one or more Biology faculty members. GRE scores are not required but can be provided if available. International applicants must meet the KSU graduate school requirements for English proficiency, but TOEFL IBT scores ≥ 100 (with 22 or higher on the SPEAK test) or IELTS ≥ 7.0 are preferred.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Contact Info

Graduate Program Contact: biology@ksu.edu

Graduate Program Director: Dr. Michael Veeman (veeman@ksu.edu)

Course Requirements

90 credit hours, including at least 24 hours of graded coursework and at least 30 hours of research credit. Depending on the student's previous coursework, the supervisory committee may require up to 30 hours of graded courses. At least 15 hours of the graded coursework must be at the 800 level or higher. All students must take BIOL 863 (Professional Skills and Ethics) in the first year. Other courses are selected in consultation with the student's Major Professor and supervisory committee, which is typically formed in the second semester. These flexible requirements allow Programs of Study to be tailored to the research and career development needs of individual students across diverse biological subdisciplines. Courses from other KSU units including but not limited to Agronomy, Biochemistry and Molecular Biophysics, Geography, Plant Pathology and Statistics can be included in the Program of Study.

Enrollment Requirements

Biology Ph.D. students should enroll in 9 credit hours per semester, excluding summer semester, to be on track to graduate in the typical 5 years. Students on appointment as GTAs or GRAs must always be enrolled in at least 6 credit hours in each Spring and Fall semester to qualify for salary and benefits. Students who are no longer on a GTA or GRA appointment but have not completed their final degree requirements must enroll in 1 hour per semester until the dissertation is completed.

Required Course

- BIOL 863 - Professional Skills and Ethics **Credits: 3**

Suggested Courses

Rotation students should sign up for a 1-credit section of BIOL 891 (Advanced Problems in Biology) for each rotation.

Students with research interests in molecular and cellular biology will often take BIOL 705 (Eukaryotic Genetics), BIOL 707 (Advanced Cell Biology), and BIOL 860 (Modern Molecular Approaches) in their first year.

Many cutting-edge topics are taught as different sections of BIOL 890 (Advanced Topics in Biology). Students are encouraged to consult the course schedule for an up-to-date list of these offerings.

Doctoral students in Biology are encouraged to take courses that help build quantitative and computational skills. These include but are not limited to:

- BIOL 734 - Introduction to Genomics and Bioinformatics **Credits: 4**
- BIOL 810 - Analysis of Ecological Gradients **Credits: 3**
- BIOL 823 - Demographic Methods **Credits: 3**
- PLPTH 813 - Bioinformatics Applications **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**

Electives

- 21 credit hours of electives, with at least 15 hours at the 800 level or higher **Credits: 21**

Research

Minimum 30hrs. Students without a prior M.S. degree will typically take 66 hours of research credit to make up the total of 90 hours required. Students with a prior M.S. may request transfer of up to 30 credit hours toward the 90 credits required for the doctorate and would only need 36 hours.

- BIOL 998 - PhD Research in Biology **Credits: 1-18 (30)**

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Microbiology (PHD)

The PhD program in Microbiology trains students to be independent, rigorous and creative microbiologists in preparation for careers in research, teaching, industry and government. Most Microbiology PhD students will graduate in 5 years and publish 2-5 papers.

Admission Requirements

The Microbiology Ph.D. degree, offered through the Biology graduate program, requires a minimum of 24-30 hrs course work, including 15 hours of courses at the 800 level. Students already holding an applicable master's degree upon admission can count

30 credits toward the 90 credits required for the doctorate. Course selection is done in consultation and approval of the student's supervisory committee and should include the following.

Course Requirements

I. Required Courses

- BIOCH 755 - Biochemistry I **Credits: 3**
- BIOCH 765 - Biochemistry II **Credits: 3**
- BIOL 863 - Professional Skills and Ethics **Credits: 3**

II. Suggested courses for the specialization in ecological microbiology

- AGRON 645 - Soil Microbiology **Credits: 3**
- BIOCH 766 - Recombinant DNA Laboratory I **Credits: 1**
- BIOCH 767 - Recombinant DNA Laboratory II **Credits: 1**
- BIOL 604 - Biology of the Fungi **Credits: 3**
- BIOL 632 - Ecology Laboratory **Credits: 1**
- BIOL 805 - Advanced Mycology **Credits: 3**
- BIOL 818 - Advanced Aquatic Ecology **Credits: 3**
- BIOL 823 - Demographic Methods **Credits: 3**
- BIOL 826 - Nutrient Dynamics **Credits: 3**
- BIOL 860 - Modern Molecular Approaches **Credits: 3**
- BIOL 865 - Advanced Plant Ecology **Credits: 4**
- BIOL 870 - Advanced Plant Systematics **Credits: 4**
- BIOL 886 - Confocal, Fluorescence and Light Microscopy **Credits: 3**
- BIOL 888 - Electron Microscopy Techniques **Credits: 3**
- PLPTH 835 - Plant Virology **Credits: 3**
- PLPTH 840 - Plant Pathogenic Bacteria **Credits: 2**
- PLPTH 845 - Plant Pathogenic Fungi **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

III. Suggested courses for the specialization in molecular microbiology

- BIOCH 766 - Recombinant DNA Laboratory I **Credits: 1**
- BIOCH 767 - Recombinant DNA Laboratory II **Credits: 1**
- BIOCH 920 - Nucleic Acids **Credits: 3**
- BIOCH 930 - Proteins **Credits: 3**
- BIOCH 950 - Advanced Topics in Protein Science **Credits: 3**
- BIOL 670 - Immunology **Credits: 3**
- BIOL 671 - Immunology Lab **Credits: 2**
- BIOL 676 - Molecular Genetics Laboratory **Credits: 3**
- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**

- BIOL 730 - General Virology Credits: 3
- BIOL 830 - Advanced Virology Credits: 3
- BIOL 835 - Cellular and Molecular Parasitology Credits: 3
- BIOL 840 - Molecular and Cellular Immunology Credits: 3
- BIOL 850 - Advanced Topics in Immunology Credits: 1-2
- BIOL 860 - Modern Molecular Approaches Credits: 3
- BIOL 886 - Confocal, Fluorescence and Light Microscopy Credits: 3
- BIOL 888 - Electron Microscopy Techniques Credits: 3
- DMP 860 - Bacterial Pathogenesis and Host Response Credits: 3
- DMP 871 - Molecular Diagnostics of Infectious Diseases Credits: 3
- DMP 878 - Applications of Flow Cytometry Credits: 1-3

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Credits Required for Doctorate: 90

Master of Science

Biology (MS)

The M.S. program in Biology provides advanced training in numerous biological subdisciplines including ecology, evolution, physiology, genetics, genomics, molecular biology, developmental biology, and cell biology. This is a research-based program in which students conduct laboratory and/or field research under the guidance of faculty mentors. These research projects form the basis for an M.S. thesis and are also typically published as peer-reviewed research papers. The M.S. in Biology prepares students for private and public sector employment as well as for further graduate study.

The M.S. program in Biology requires 30 credit hours, including a minimum of 22 credit hours of graded coursework and 6-8 hours of BIOL 898 (M.S. Research in Biology). A report option instead of a thesis is only available in exceptional circumstances and requires the permission of the supervisory committee and graduate program director.

Admission Requirements

Applicants must have a 4-year bachelor's degree. An average of B or higher in the final 60 hours of undergraduate coursework (3.0/4.0 on a 4-point scale or equivalent) is required for regular admission, but applicants with lower GPAs can potentially be admitted on probationary status. Preference is given to applicants with undergraduate degrees in biology or other life sciences. Applicants with undergraduate degrees in other disciplines should have extensive life science coursework or other evidence of biology fundamentals. Prior research experience is highly desirable. A key issue in admissions decisions is a good match with the research interests of one or more Biology faculty members who could serve as the applicant's Major Professor. Prospective applicants are encouraged to contact potential mentors to discuss opportunities in their research programs.

Applications must include transcripts, contact details for three professional references, and a personal statement of goals and experiences. The personal statement should discuss career goals and past research experience, and it should explain how the applicant's research interests are aligned with the research programs of one or more Biology faculty members. GRE scores are not

required but can be provided if available. International applicants must meet the KSU Graduate School requirements for English proficiency, but TOEFL IBT scores ≥ 100 (with 22 or higher on the SPEAK test) or IELTS ≥ 7.0 are preferred.

Contact Info

Graduate Program Contact: biology@ksu.edu

Graduate Program Director: Dr. Michael Veeman (veeman@ksu.edu)

Course Requirements

30 credit hours, including 22-24 hours of graded credits and 6-8 hours of research credit. At least 18 hours must be at the 700 level or above. All students must take BIOL 863 (Professional Skills and Ethics, 3 hours) in the first year. Other courses are selected in consultation with the student's Major Professor and supervisory committee. These flexible requirements allow Programs of Study to be tailored to the research and career development needs of individual students across diverse biological subdisciplines. Courses from other KSU units including but not limited to Agronomy, Biochemistry and Molecular Biophysics, Geography, Plant Pathology and Statistics can be included in the Program of Study.

Required Course

- BIOL 863 - Professional Skills and Ethics **Credits:** 3

Elective Courses

- 19-21 hours of electives, with at least 15 hours at the 700 level or higher **Credits:** 19-21

Research

- BIOL 898 - Master's Research in Biology **Credits:** 1-9 (6-8)

Total Hours Required for Master's: 30

Chemistry

Christer B. Aakeröy, Head

Takashi Ito, Graduate Recruiting and Admissions Chair

Paul E. Smith, Graduate Program Director

213 CBC Building

785-532-6668

Fax: 785-532-6666

chemdept@ksu.edu

<https://www.k-state.edu/chem>

Research Facilities

As a medium-sized department, K-State Chemistry is large enough to ensure that our students are provided with access to a variety of first-rate equipment, yet small enough to assure our students of close personal interactions with faculty. We recognize

that our students are individuals, and our programs are structured to allow each student to reach his or her potential at an appropriate pace. The Department of Chemistry occupies two adjoining buildings – CBC and King Hall – that provide over 81,000 square feet of research, teaching and office space for the activities of our 19 faculty, 5 staff and 55 graduate students and research associates.

Computing resources for research and teaching are provided by the KSU research computing cluster, Beocat. Beocat is currently the largest academic supercomputer in Kansas. All Faculty, staff and students have access to the Beocat compute nodes.

The department houses extensive computational resources including two Beowulf clusters, and numerous and broad electrochemical research capabilities. Chemistry researchers have access to a wide array of microscopy techniques, including AFM, STM, TEM, near-field scanning optical microscopy, multiphoton-excited fluorescence microscopy (with single molecule detection capability), and ultrafast video microscopy.

The Chemistry Department possesses substantial instrumentation for the synthesis of nanoscale materials: chemical vapor deposition, plasma-enhanced chemical vapor deposition, electrochemical deposition and metal-vapor deposition methods are all available in faculty research groups. An extensive set of materials characterization methods are available within the department including surface plasmon resonance, ellipsometry, chemisorption and temperature-programmed desorption techniques, thermogravimetric analysis, differential scanning calorimetry and FT-IR/Raman/DRIFT spectra of gases, liquids and solids.

Apart from routine spectroscopic instrumentation, the department houses many custom-built systems for time-resolved terahertz spectroscopy, fluorescence line-narrowing spectroscopy, hole-burning spectroscopy, single-molecule spectroscopy and high-resolution FT spectroscopy.

The Department also has a well-stocked chemical storeroom, electronics and machine shops (staffed by full-time personnel), and a dedicated glass shop operated by a Senior Scientific Glassblower. Safety in our research and teaching laboratories is of paramount importance to us, and we are fortunate to have a full-time safety officer.

The Kansas State University Libraries provide excellent facilities and support for research in the chemical sciences. Apart from electronic access to a full spectrum of research journals, the libraries maintain an extensive collection of print holdings. The library also participates in an interlibrary loan service that provides rapid access to work that has been published in obscure journals. The department enjoys round-the-clock access to all the resources of SciFinder Scholar and other online databases.

Programs of study and group structure

Programs of study and group structure

The Department of Chemistry offers programs leading to the M.S. and Ph.D. degrees specializing in analytical, biological, inorganic, materials, organic, and physical chemistry. The department faculty and research programs are operated through six overlapping "themes"; Drug Design, Biomolecular Processes, and Biosensing, Theory, Computation, and Advanced Analytics, Energy, Environment, Agriculture, and Sustainability, Design and Synthesis of Molecules and Supramolecular Architectures, Spectroscopy, Imaging, and Dynamics, and Functional Materials, Catalysis, and Nanochemistry. Each "theme" has faculty and adjunct faculty who work together to coordinate each graduate program involving graduate courses, seminar programs and a cumulative examination system.

Entering students are administered diagnostic exams in each of the traditional areas of chemistry (analytical, inorganic, organic, and physical) designed to assess their preparation for graduate studies. A minimum grade of C must be obtained in all courses in order to earn credit and a minimum overall grade point average of 3.0 (out of a possible 4.0) is necessary. Original research is the most important part of the graduate program, and selection of a research director is made during the first semester in residence in order to allow students to start work on their research projects at an early date.

Financial support

Most graduate students are supported for the duration of their studies by various teaching assistantships, research assistantships, and fellowships. Incoming students are generally awarded teaching assistantships; summer support also is provided if

performance in course work and teaching duties during the academic year is satisfactory. Students with excellent undergraduate credentials frequently receive supplemental departmental fellowships and are considered for graduate fellowships on a university-wide competitive basis. Outstanding graduate students are recognized annually through teaching and research awards.

Accelerated

Accelerated Chemistry (BS)/Adult Learning and Leadership (MS)

The accelerated Accelerated Chemistry (BS)/Adult Learning and Leadership (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Adult Learning and Leadership degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Students should apply to the program during their junior year. Applications should include the following:

- A completed on-line application to the K-State Graduate School with paid application fee.
- Written documentation demonstrating agreement by a member of the Graduate Faculty in the Kansas State University College of Education, Adult Learning and Leadership Program, who will serve as the student's major professor.
- Statement of objectives: State your academic objectives in one to two pages and include the following information: (1) career and professional goals and aspirations and how being accepted to the program will specifically benefit your goals and aspirations; (2) description of relevant professional experience within education or a related field; and (3) future professional plans.
- Resume/curriculum vitae

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- The BA/BS degree normally requires 120 undergraduate credit hours and the M.S. degree 33 graduate credit hours. However, the MS program requires 9 credit hours of elective courses at the 600 level or above that may count towards both the Chemistry BA/BS and the MS
- Students may begin taking graduate courses during their 4th year of the program.
- Graduate courses must be completed with a minimum GPA of 3.0.

- A grade of C or above must be achieved in all courses taken to fulfill Chemistry BA/BS requirements.
- The BA/BS degree may be awarded at any time following the completion of the undergraduate degree requirements. Alternatively, the BA/BS and MS degrees may be awarded concurrently following completion of the full program.
- Students must choose one of two options in the BA/BS program – the Chemistry Program or the Chemical Science Program.

Course Requirements

Adult Learning and Leadership (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CHM 611 - Inorganic Chemistry I **Credits: 3**
- CHM 612 - Inorganic Chemistry II **Credits: 3**
- CHM 652 - Organic Chemistry III: Reactions and Mechanisms **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Chemistry (BS)/Master of Business Administration (MBA)

The accelerated Accelerated Chemistry (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CHM 611 - Inorganic Chemistry I **Credits: 3**
- CHM 612 - Inorganic Chemistry II **Credits: 3**
- CHM 652 - Organic Chemistry III: Reactions and Mechanisms **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Chemistry (PHD)

Group programs

There are six programs of graduate course work that can be followed for the Ph.D. degree:

- Analytical Group Program
- Biological Group Program
- Inorganic Group Program
- Materials Group Program
- Organic Group Program
- Physical Group Program

The program of study is different in each program, but has the following common features:

Departmental requirements:

Two credit hours of common course work are required for all group programs.

Credit seminar programs:

Two credit hours of credit seminar are required together with attendance at a seminar program throughout the entire program of study. Students register for 0 credit hours in the seminar course when the seminar program is not taken for credit.

Group programs:

- Substantive Group Courses: A number of credit hours are required in course work specific to a particular group.
- Other Chemistry Department Courses: A number of credit hours are required in chemistry department courses.
- Additional Courses: A number of credit hours may be required that may be taken from chemistry department courses and sometimes from courses offered in other departments.

Cumulative examinations:

There are separate cumulative examinations in the Analytical, Inorganic, Materials, Organic and Physical groups.

Admission Requirements

Applicants admitted to the Chemistry graduate program must select a program of study from a "group program" that will include at least 20 hours of graduate course work, which may include courses from all areas of chemistry, and must include at least 16 hours of graduate course work in Chemistry. A total of 90 semester hours is required, including at least 50 hours of research for students entering with a bachelor's degree and 36 hours for students entering with a master's degree. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

The preliminary exam for the Ph.D. degree consists of a series of written cumulative exams on topics within the student's area of specialization and an oral research proposition examination that the student must prepare and defend before his or her supervisory committee. Completion of the Ph.D. degree requires the submission of a written dissertation and its oral defense before one's supervisory committee.

Course Requirements

Department requirements (2 credit hours)

Every student in the Chemistry Department is required to take the following one credit hour courses:

- CHM 601 - Safe Chemical Laboratory Practices **Credits: 1**
- CHM 700 - Practicum in Teaching Chemistry **Credits: 1**

Credit seminar programs (2 hours)

All students in the Chemistry Department are required to attend the appropriate group seminar program every semester (registering for 0 or 1 credit hour), and to register for a total of 2 credit hours during their Ph.D. program. When the seminar program is taken for credit, the student will be evaluated on a 50 minute seminar.

Analytical group program

- CHM 901 - Graduate Seminar in Analytical Chemistry **Credits: 0-1**

Biological group program

one from:

- CHM 901 - Graduate Seminar in Analytical Chemistry **Credits: 0-1**
- CHM 902 - Graduate Seminar in Inorganic Chemistry **Credits: 0-1**
- CHM 903 - Graduate Seminar in Organic Chemistry **Credits: 0-1**
- CHM 904 - Graduate Seminar in Physical Chemistry **Credits: 0-1**

Inorganic group program

- CHM 902 - Graduate Seminar in Inorganic Chemistry **Credits: 0-1**

Materials group program

one from:

- CHM 901 - Graduate Seminar in Analytical Chemistry **Credits: 0-1**
- CHM 902 - Graduate Seminar in Inorganic Chemistry **Credits: 0-1**
- CHM 903 - Graduate Seminar in Organic Chemistry **Credits: 0-1**
- CHM 904 - Graduate Seminar in Physical Chemistry **Credits: 0-1**

Organic group program

- CHM 903 - Graduate Seminar in Organic Chemistry **Credits: 0-1**

Physical group program

- CHM 904 - Graduate Seminar in Physical Chemistry **Credits: 0-1**

Group programs (16 credit hours)

Analytical group program

Substantive group courses:

9 credit hours required consisting of at least **three** 3-credit-hour analytical group courses that can be chosen from the following courses:

- CHM 920 - Analytical Separations **Credits: 3**
- CHM 937 - Applications of Surface Science to Chemistry **Credits: 3**
- CHM 939 - Topics in Analytical Chemistry **Credits: 1-3**
- CHM 940 - Chemical Microscopy **Credits: 3**
- CHM 944 - Electroanalytical Chemistry **Credits: 2-3**
- CHM 947 - Applied Molecular Spectroscopy **Credits: 3**

Other chemistry department courses:

3 to 6 credit hours are required consisting of one or two 3-credit-hour courses chosen from the following courses:

- CHM 801 - Chemical Thermodynamics Credits: 3
- CHM 820 - Materials Chemistry Credits: 3
- CHM 854 - Theoretical Chemistry I Credits: 3
- CHM 856 - Chemical Kinetics Credits: 3
- CHM 862 - Organic Spectroscopy Credits: 3
- CHM 929 - Physical Methods in Inorganic Chemistry Credits: 3
- CHM 954 - Theoretical Chemistry II Credits: 3
- CHM 965 - Physical Organic Chemistry Credits: 3

Additional courses:

The remaining 1 to 4 credit hours may be taken from the two previous lists or from:

Any science or engineering courses at the 600 level or higher in any department other than Chemistry in the colleges of Arts and Sciences, Agriculture, Human Ecology, or Engineering.

- CHM 600 - Scientific Glassblowing Credits: 1
- CHM 657 - Inorganic Techniques Credits: 2
- CHM 800 - Chemistry in Outer Space and in the Laboratory Credits: 2
- CHM 930 - Homogeneous Catalysis Credits: 2

Biological group program

Students must meet the group requirement by completing one of the other group programs (Analytical, Inorganic, Materials, Organic or Physical). In addition, students in the biological group may select additional courses offered either inside or outside the Department of Chemistry. A list of possible courses that students may choose to take that are offered outside the department include the following:

- BIOCH 755 - Biochemistry I Credits: 3
- BIOCH 765 - Biochemistry II Credits: 3
- BIOL 855 - Molecular Biology of Cellular Membranes Credits: 3
- BIOL 860 - Modern Molecular Approaches Credits: 3

Inorganic group program

Substantive group courses:

9 credit hours required consisting of the following courses:

- CHM 929 - Physical Methods in Inorganic Chemistry Credits: 3

Other chemistry department courses:

3 to 6 credit hours from the following courses:

- CHM 801 - Chemical Thermodynamics Credits: 3
- CHM 820 - Materials Chemistry Credits: 3
- CHM 854 - Theoretical Chemistry I Credits: 3

- CHM 856 - Chemical Kinetics **Credits: 3**
- CHM 862 - Organic Spectroscopy **Credits: 3**
- CHM 920 - Analytical Separations **Credits: 3**
- CHM 935 - Selected Topics in Inorganic Chemistry **Credits: 1-3**
- CHM 937 - Applications of Surface Science to Chemistry **Credits: 3**
- CHM 940 - Chemical Microscopy **Credits: 3**
- CHM 944 - Electroanalytical Chemistry **Credits: 2-3**
- CHM 947 - Applied Molecular Spectroscopy **Credits: 3**
- CHM 954 - Theoretical Chemistry II **Credits: 3**
- CHM 965 - Physical Organic Chemistry **Credits: 3**

Additional courses:

The remaining 1 to 4 credit hours may be taken from the two previous lists or from:

Any science or engineering courses at the 500 level or higher in any department other than Chemistry in the colleges of Arts and Sciences, Agriculture, Human Ecology, or Engineering.

- CHM 600 - Scientific Glassblowing **Credits: 1**
- CHM 657 - Inorganic Techniques **Credits: 2**
- CHM 800 - Chemistry in Outer Space and in the Laboratory **Credits: 2**
- CHM 930 - Homogeneous Catalysis **Credits: 2**

Materials group program

Substantive group courses:

3 credit hours required consisting of the following course:

- CHM 820 - Materials Chemistry **Credits: 3**

Other chemistry department courses:

9 to 12 credit hours from the following courses:

- CHM 801 - Chemical Thermodynamics **Credits: 3**
- CHM 854 - Theoretical Chemistry I **Credits: 3**
- CHM 856 - Chemical Kinetics **Credits: 3**
- CHM 862 - Organic Spectroscopy **Credits: 3**
- CHM 920 - Analytical Separations **Credits: 3**
- CHM 929 - Physical Methods in Inorganic Chemistry **Credits: 3**
- CHM 935 - Selected Topics in Inorganic Chemistry **Credits: 1-3**
- CHM 937 - Applications of Surface Science to Chemistry **Credits: 3**
- CHM 940 - Chemical Microscopy **Credits: 3**
- CHM 944 - Electroanalytical Chemistry **Credits: 2-3**
- CHM 947 - Applied Molecular Spectroscopy **Credits: 3**
- CHM 954 - Theoretical Chemistry II **Credits: 3**
- CHM 965 - Physical Organic Chemistry **Credits: 3**

Additional courses:

The remaining 1 to 4 credit hours may be taken from the two previous lists or from:

Any Science or Engineering courses at the 500 level or higher in any department other than chemistry in the College of Arts and Sciences, Agriculture, Human Ecology, or Engineering. Special consideration should be given to the following courses:

- CHM 600 - Scientific Glassblowing **Credits: 1**
- CHM 657 - Inorganic Techniques **Credits: 2**
- CHM 800 - Chemistry in Outer Space and in the Laboratory **Credits: 2**
- CHM 930 - Homogeneous Catalysis **Credits: 2**
- PHYS 655 - Physics of Solids **Credits: 3**

Organic group program

Substantive group courses:

13 credit hours required consisting of the following courses:

- CHM 860 - Synthetic Organic Chemistry **Credits: 4**
- CHM 862 - Organic Spectroscopy **Credits: 3**
- CHM 965 - Physical Organic Chemistry **Credits: 3**

Other chemistry department courses:

0 to 3 credit hours from any Chemistry Department courses with numbers above 710 excluding seminar courses.

Additional courses:

0 to 3 credit from any science or engineering courses at the 500 level or higher in any department other than Chemistry in the colleges of Arts and Sciences, Agriculture, Human Ecology, or Engineering.

Physical group program

Substantive group courses:

3 credit hours consisting of the following course:

- CHM 854 - Theoretical Chemistry I **Credits: 3**

And 3 credit hours from the following list of courses:

- CHM 801 - Chemical Thermodynamics **Credits: 3**
- CHM 856 - Chemical Kinetics **Credits: 3**
- CHM 937 - Applications of Surface Science to Chemistry **Credits: 3**
- CHM 947 - Applied Molecular Spectroscopy **Credits: 3**
- CHM 950 - Chemical Statistical Mechanics **Credits: 3**
- CHM 954 - Theoretical Chemistry II **Credits: 3**

- CHM 965 - Physical Organic Chemistry **Credits: 3**

Other chemistry department courses:

6 credit hours from any Chemistry Department courses with numbers above 710 excluding seminar courses.

Additional courses:

The remaining 4 credit hours may be taken from the two previous lists or from:

Any Science or Engineering courses at the 600 level or higher in any department other than chemistry in the College of Arts and Sciences, Agriculture, Human Ecology, or Engineering.

- CHM 600 - Scientific Glassblowing **Credits: 1**
- CHM 657 - Inorganic Techniques **Credits: 2**
- CHM 800 - Chemistry in Outer Space and in the Laboratory **Credits: 2**
- CHM 930 - Homogeneous Catalysis **Credits: 2**

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Master of Science

Chemistry (MS)

A minimum of 30 semester hours of graduate credit is required for the Chemistry Master of Science degree program, of which no less than 22 hours will be earned in course work. The program of study for the master's degree will normally include up to 15 hours in the student's major area of study, 6 to 12 hours in related areas, and one hour of graduate seminar. At least two semester hours of credit must be earned at the 700 level or higher in each of three of the following groups: analytical, inorganic, organic, physical, materials, and biological. A master's thesis that is based on 6 to 8 semester hours of original research must also be defended before one's supervisory committee.

Admission Requirements

Course Requirements

Analytical group program

- CHM 920 - Analytical Separations **Credits: 3**
- CHM 937 - Applications of Surface Science to Chemistry **Credits: 3**
- CHM 940 - Chemical Microscopy **Credits: 3**

- CHM 944 - Electroanalytical Chemistry Credits: 2-3
- CHM 947 - Applied Molecular Spectroscopy Credits: 3
- CHM 939 - Topics in Analytical Chemistry Credits: 1-3

Inorganic group program

- CHM 929 - Physical Methods in Inorganic Chemistry Credits: 3
- CHM 930 - Homogeneous Catalysis Credits: 2
- CHM 935 - Selected Topics in Inorganic Chemistry Credits: 1-3

Materials group program

- CHM 820 - Materials Chemistry Credits: 3

Organic group program

- CHM 860 - Synthetic Organic Chemistry Credits: 4
- CHM 862 - Organic Spectroscopy Credits: 3
- CHM 965 - Physical Organic Chemistry Credits: 3

Physical group program

- CHM 801 - Chemical Thermodynamics Credits: 3
- CHM 854 - Theoretical Chemistry I Credits: 3
- CHM 856 - Chemical Kinetics Credits: 3
- CHM 937 - Applications of Surface Science to Chemistry Credits: 3
- CHM 947 - Applied Molecular Spectroscopy Credits: 3
- CHM 950 - Chemical Statistical Mechanics Credits: 3
- CHM 954 - Theoretical Chemistry II Credits: 3
- CHM 955 - Selected Topics in Physical Chemistry Credits: 1-3

Biological group program

- Any 700 level or higher Biochemistry course

Total Hours Required for Master's: 30

Economics

Dr. Peri da Silva, Department Head

Dr. Lance Bachmeier, Director of Graduate Studies

327 Waters Hall

785-532-7357

Fax: 785-532-6919

econ@ksu.edu
<http://www.ksu.edu/economics/>

Program description

The Department of Economics offers graduate programs leading to the M.A. and Ph.D. degrees. The M. A. degree can be completed in one to two years, and course work for the Ph.D. degree can be completed in three years. The Ph.D. degree also requires passage of comprehensive examinations and the completion of a doctoral dissertation.

The graduate program in economics provides a strong foundation in macroeconomic theory, microeconomic theory, and econometrics. In addition, it offers course work by nationally recognized scholars in such fields as development economics, econometrics, international economics, industrial organization, labor economics, macroeconomics, and public finance. Advanced course work is also available in agricultural economics, computer science, mathematics, and statistics.

Financial assistance

There are two types of graduate teaching assistants: those who teach their own course and those who assist others by grading exams, proctoring, and carrying out other assignments. Graduate teaching assistantships provide a stipend, tuition waiver, and subsidized health insurance. In addition, the department offers supplemental awards: the Carroll B. Greene Scholarship, to the outstanding female graduate student, the M. Jarvin Emerson Memorial Scholarship to a top doctoral student, the John Nordin Memorial Scholarship for outstanding performance in economic theory, and the Thomas Graduate Student Teaching Award.

Accelerated

Accelerated Economics (BS)/Master Business Administration (MBA)

The accelerated Accelerated Economics (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The student must complete all B.S. in economics undergraduate requirements with the exception that up to 9 credit hours of 600 or 700 level professional electives taken for graduate credit can also count toward his/her undergraduate degree requirements.

The student must complete all the requirements of the M.B.A. program.

Once an individual is admitted to the accelerated B.S. Economics/M.B.A. degree program, the student should consult the graduate handbook for policies and procedures for graduate degrees, which include: supervisory committee, final examination, thesis defense, etc. The student's supervisory committee must approve the program of study, which is that student's graduation requirements for the M.B.A.

In the event that a student begins this program, but does not wish to finish it, he/she must change the nine credit hours of his/her graduate classes to undergraduate credit and then he/she will receive a B.S. in economics degree.

The degree requires continuous enrollment. If a student fails to enroll in classes for over a year, then student has lost the ability to count courses toward both his/her undergraduate and graduate degree requirements unless granted permission by the respective departments.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ECON 608 - Python Coding for Economics **Credits: 3**
- ECON 630 - Introduction to Econometrics **Credits: 3**
- ECON 633 - Public Finance **Credits: 3**
- ECON 684 - International Finance and Open Economy Macroeconomics **Credits: 3**
- ECON 686 - Economics Forecasting **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Economics (PHD)

The graduate program in economics provides a strong foundation in macroeconomic theory, microeconomic theory, and econometrics. In addition, it offers course work by nationally recognized scholars in such fields as development economics, econometrics, international economics, industrial organization, labor economics, macroeconomics, and public finance. Advanced course work is also available in agricultural economics, computer science, mathematics, and statistics.

Admission Requirements

Course Requirements

Required Courses

As part of the 90 hours required for a Ph.D. degree, each Ph.D. degree program must contain the following 30 hours of course work or equivalent:

- ECON 735 - Mathematical Economics **Credits: 3**
 - ECON 805 - Macroeconomic Theory I **Credits: 3**
 - ECON 830 - Econometrics I **Credits: 3**
 - ECON 905 - Macroeconomic Theory II **Credits: 3**
 - ECON 930 - Econometrics II **Credits: 3**
 - ECON 940 - Advanced Microeconomic Theory I **Credits: 3**
 - ECON 945 - Advanced Microeconomic Theory II **Credits: 3**
- Two graduate economics courses at the 800-level or above, one of which is in a third field. **Credits: 6**
- and select one of these four courses:
- AGECE 901 - Research Methods in Economics **Credits: 3**
 - AGECE 905 - Agricultural Demand and Commodity Marketing **Credits: 3**
 - AGECE 923 - Economics of Agricultural Production **Credits: 3**
 - AGECE 936 - Quantitative Topics in Agricultural Economics **Credits: 3**

Additional requirement

Also required is course work in two fields of specialization. Normally a field consists of 6 additional hours of course work in economics or in related departments. Students entering the Ph.D. program with a master's degree in economics may receive 30 hours of credit toward the 90 credits required for the doctorate.

Ph.D. dissertation

In the process of completing the research and writing of a Ph.D. dissertation, the student must enroll in at least 30 hours of the following:

- ECON 999 - PhD Research in Economics **Credits: 1-18**

Ph.D. qualifying exams

Students must pass qualifying exams in macroeconomic theory and microeconomic theory. Students are normally expected to take these exams immediately after completing the aforementioned course work. The courses preparing the students for these exams are:

- ECON 805 - Macroeconomic Theory I **Credits: 3**
- ECON 905 - Macroeconomic Theory II **Credits: 3**
- ECON 940 - Advanced Microeconomic Theory I **Credits: 3**
- ECON 945 - Advanced Microeconomic Theory II **Credits: 3**

Additional Requirements

A preliminary exam must also be passed in one other fields. This field must include at least six hours of course work at the 800-level or above. The field exam may not be taken until the macroeconomic theory and microeconomic theory exams are passed.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Arts

Economics (MA)

The M.A. program in Economics can be tailored to prepare students for positions in business or government or to provide a solid foundation for Ph.D. level studies. The master's degree program consists of at least 30 credit hours and includes courses in microeconomic theory, macroeconomic theory and statistics. Beyond this, students have considerable flexibility in choosing coursework. Remaining courses are selected and agreed upon by the student and his or her advisory committee based on the student's background, objectives, and undergraduate preparation. The M.A. degree can be completed in one to two years.

Admission Requirements

In addition to general Graduate School requirements, the Department of Economics has the following requirements for admission.

Course requirements

- 3 credit hours of intermediate macroeconomic theory
- 3 credit hours of intermediate microeconomic theory
- 3 credit hours of statistics taken in a statistics department
- 3 credit hours of calculus taken in a math department

If these courses are not part of the student's undergraduate program, admission will be provisional upon completing these courses.

Grade requirements

- A 3.0 GPA in your most recently completed degree program.
- A grade of C or above for the courses listed above.

Although students with academic performance below these standards may be admitted because of other considerations such as high GRE scores, admission will be probationary.

Graduate record examination

- Submitting a Graduate Record Examination (GRE) score is optional, but most successful applicants include a GRE general test score with their application. Strong performance on the GRE can offset weaknesses in the application.

Course Requirements

Each master's degree program must consist of at least 30 hours and include courses in microeconomic theory (ECON 720) and macroeconomic theory (ECON 805) along with a course in statistics, unless the student has previously taken a statistics course for graduate credit.

Specific course requirements beyond these core requirements are selected and agreed upon by the student and his or her advisory committee based on the student's background, objectives, and undergraduate preparation. The program may include a minor consisting of 6 to 12 hours of course credit in a single field (outside the Department of Economics).

Degree options

The coursework only option for this program does not require a culminating experience.

Three options are available to complete the master's degree: thesis option, report option, and Ph.D. qualifying-exam option.

Thesis Option Courses

As part of the required 30 hours of course work, the student must complete a master's thesis, for which 6 semester credit hours are given.

Report Option Courses

As part of the required 30 hours of course work, the student must complete a master's report for which 2 semester hours of credit are given.

Note:

Ph.D. qualifying-exam option: The Ph.D. qualifying-exam option requires successful completion (a grade of B or higher) of a graduate economics course that has as one of its requirements the writing of a term paper, and a master's-level pass in the Ph.D. qualifying exams in microeconomic theory and macroeconomic theory.

Total Hours Required for Master's: 30

English

Karin Westman, Head

Cameron Leader-Picone, Director of Graduate Studies

108 English/Counseling Services Bldg.

785-532-6716

Fax: 785-532-2192

gradeng@ksu.edu

<http://www.ksu.edu/english/>

Admission procedures

All applications are reviewed by the director of graduate studies and the graduate advisory committee within the department. Applicants are expected to have performed at a B level or better in all of their undergraduate work, but the committee bases its judgment primarily on the student's performance in English courses.

Because some persons do not mature as students until late in their undergraduate careers, the department may sometimes accept students with less than the expected grade average if the students' final semesters indicate the ability to do graduate work. Moreover, the department recognizes that students who have majored in fields other than English as undergraduates may choose English for their graduate work. Such students are usually admitted with provisional standing and are enrolled in courses for undergraduate credit until any deficiencies are made up.

Applications need to include the following:

1. Completed application form.
2. Two copies of the official transcript from each college or university the applicant has attended. Only official copies are accepted by the Graduate School. (If the transcripts do not show an undergraduate major comparable to that of K-State with a minimum of 24 credit hours in English above the freshman level, the applicant may be admitted with provisional standing and enrolled in courses for undergraduate credit until the deficiency has been removed.)
3. Three letters of recommendation from persons qualified to speak informatively of the applicant's academic performance and his or her potential for advanced study in English.
4. A statement of objectives (a succinct account of aims and interests).
5. A writing sample of 8-15 pages of analytical or persuasive prose.
6. Application fee.
7. For applicants who expect to enter the creative writing track, a writing sample of either 10-30 pages of fiction or 6-10 poems.
8. For international students, an official TOEFL score report and Kansas State University's financial affidavit.

Financial support

Most M.A. students qualify to be graduate teaching assistants and are provided valuable teaching experience as well as financial support. GTAs receive a nine-month stipend and a full tuition waiver. The Department of English also offers a small number of scholarships; awarded on a competitive basis, these may be held in addition to an assistantship. Students in the creative writing track may apply for the Seaton Fellowships; students in all tracks may apply for the Edwards, Glenn, Grindell, and Popkins Scholarships.

Graduate Certificate

Technical Writing and Professional Communication Graduate Certificate

Contact: Han Yu

E-mail: hyu1@ksu.edu

Home page: www.ksu.edu/english/programs/techwriting.html

Offered through the English department, the graduate certificate in technical writing and professional communication recognizes the complexities and demands of written, oral, and digital communication in the workplace as well as the interdisciplinary character of writing and communication studies in the academy. Thus, while centered on writing, the certificate includes course options in rhetoric, communication, design, digital media, speech, and group dynamics.

The certificate is available to any student with an undergraduate degree. A current undergraduate may take courses toward the graduate certificate if they enroll and pay for graduate credit. Classes for the certificate do not count toward their undergraduate degree. In some cases, courses may count toward a graduate degree. Interested students should meet with the program contact for

advising and planning a course of study before taking any courses.

The certificate requires four courses (12 credit hours): one in writing and three electives.

At least one course must be from outside the student's home discipline. Because of the wide variety of electives available, students can craft much of the certificate to meet their own career and educational goals. As with graduate degrees, participants are required to map out a coherent Program of Study with the certificate coordinator. The structure of the certificate is flexible enough so that most students, with advance planning, can pursue it without impeding regular degree progress.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

This certificate recognizes the multiple demands of written, oral, and digital communication in the workplace, as well as the interdisciplinary character of writing and communication studies in the academy. Thus, while centered on writing, the certificate also includes course options in rhetoric, communication, design, digital media, speech, and group dynamics. It emphasizes the rich theoretical and rhetorical principles that govern effective communication across a range of contexts as well as the pragmatic skills needed in the workplace.

The certificate requires four courses (12 credits) in two categories: one in writing and three in electives.

Students map out a coherent plan of study with the certificate coordinator for submission to the Graduate School. The structure of the certificate is flexible enough so that most students, with advance planning, can pursue it without impeding regular degree progress.

To complete the certificate, students must submit sample work from their courses to be evaluated by graduate faculty in the area of Technical Communication.

Required Courses

- ENGL 759 - Studies in Technical Communication **Credits: 3**

Elective Courses

Students choose three from the following:

(Students can petition to use additional courses as electives by discussing with the Certificate Director, preferably before they take the course, and by demonstrating that course meets Certificate SLOs)

- AGCOM 610 - Crisis Communication **Credits: 3**
- AGCOM 712 - Environmental Communication **Credits: 3**
- AGCOM 810 - Scientific Communication **Credits: 3**
- COMM 726 - Seminar in Persuasion **Credits: 3**
- COMM 730 - Classical Rhetorical Theory **Credits: 3**
- COMM 733 - Rhetorical Criticism **Credits: 3**
- COMM 834 - The Rhetoric of Social Movements **Credits: 3**
- EDACE 786 - Topics in Adult Learning and Leadership **Credits: 1-3**

(Grant Writing)

- ENGL 665 - Advanced Creative Writing: Nonfiction **Credits: 3**
OR
- ENGL 753 - Theories of Composition and Rhetoric **Credits: 3**
- ENGL 755 - Studies in Composition and Rhetoric **Credits: 3**
- ENGL 756 - Business Communication **Credits: 3**
- ENGL 758 - Scientific Communication **Credits: 3**
- ENGL 765 - Creative Writing Workshop: Creative Nonfiction **Credits: 3**
- ENGL 767 - Literary Editing and Publishing **Credits: 3**
- ENGL 797 - Professional Writing Internship **Credits: 0-18**
- MC 750 - Strategic Health Communication **Credits: 3**
- MC 712 - Environmental Communications **Credits: 3**
- MC 760 - Issues, Risk, and Reputation **Credits: 3**
- MC 765 - Communication Theory **Credits: 3**

Note:

Note: ENGL 510, AGCOM 590, ART 575, COMM 526, and MANGT 520 no longer count towards the Graduate Certificate Technical Writing and Professional Communication as a result of changes to the regulations governing Graduate Certificate Programs. See the Graduate Handbook Chapter 4 B.2 for information.

Total Hours Required for Graduate Certificate: 12

Master of Arts

English (MA)

K-State's Department of English provides students with a carefully structured but individualized program that encourages creativity, promotes innovative scholarship, and fosters close working relationships between students and faculty.

Questions about our program? Contact our Director of Graduate Studies, Cameron Leader-Picone, at gradeng@ksu.edu.

Course Requirements

The M.A. degree in English is awarded in one of five tracks, each of which can be completed in 30 hours. All tracks include a literature core (9 hours); courses in the chosen track (9 hours); electives (9 hours); a seminar (3 hours); foreign language certification (or equivalent research tool); a final writing project or thesis; and a final oral examination, a defense and discussion of the writing project or thesis.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Degree Track Options

British and American Literature

Concentration in this track is on the study of British and American literature; a student may emphasize any time period in either national literature and will work with graduate faculty who are experts in that period.

Children's Literature

Concentration in this track is on the study of children's and young adult literature; a student may emphasize a particular period or region, such as nineteenth-century American literature, or a particular genre, such as picture books. Students will work with faculty who have expertise in the area, or in a field that complements the student's focus.

Creative Writing and Literature

Concentration in this track is on the student's creative work in fiction, poetry, creative nonfiction, or drama; the student will work closely with graduate faculty well-published in the genre the student chooses to emphasize. The department's visiting writers program brings several writers of national stature to campus each year. In addition, opportunities for editorial experience are open to graduate students in this track.

Cultural Studies and Literature

Concentration in this track is on training in Marxist, feminist, poststructuralist, and psychoanalytic theory. A student may complement the study of literature with the study of politics, sociology, political economy, popular and mass culture, film, and other art forms.

Composition, Rhetoric and Literature

Concentration in this track is on composition and rhetorical theory. Like the other M.A. tracks, this one can prepare students for Ph.D. work, for teaching in community colleges, and for a career in technical writing.

Total Hours Required for Master's: 30

Geography and Geospatial Sciences

Marcellus M. Caldas, Interim Department Head

Audrey Joslin, Graduate program director

1002 Seaton Hall

785-532-6727

Fax: 785-532-7310

ajoslin@k-state.edu

<http://www.ksu.edu/geography>

Overview

The Department of Geography and Geospatial Sciences graduate program at Kansas State University offers a Master of Science (MS) degree and a Philosophy (PhD) degree in Geography. Discovery and dissemination of new knowledge are the cornerstones of our mission. Drawing upon the research interests and experience of the faculty, the department's core areas of geographic inquiry are illustrated in the figure below. Much of the research conducted by faculty and graduate students incorporates more than one of these themes, and we accomplish these research activities in an atmosphere of open inquiry and academic freedom.

The department's research mission incorporates studies that reinforce the land-grant mandate of the institution, including agricultural water management and rural community development, examination of the role on climatic variability on Great Plains ecosystems, and assessment of changes in stream systems and reservoirs related to human activity. Research themes include:

- Research into human spatial behavior, regional and place identity, and the relationship between humans and the environment, such as societal adjustments to floods, population redistribution in the Great Plains, cultural, social, and ethnic change in the landscape, and assessments of migration decisions associated with residential satisfaction;
- Examination of the applicability of new geographic knowledge and the emerging technologies associated with computer cartography, geographic information systems, and remote sensing; and
- A symbiotic relationship among discovery of new knowledge, graduate and undergraduate education, and improvement in the quality of life through research application to societal issues.

In accomplishing the University's instructional mission, we stress quality teaching and advising and strive to provide all students with opportunities to develop the knowledge, understanding, and skills characteristic of an educated person. Our contributions include:

- Providing undergraduate and graduate students with a thorough grounding in the discipline of geography from a liberal arts perspective;
- Teaching service courses that provide students with an opportunity to meet a number of either general education or college distribution requirements with classes and seminars that deal with international awareness, social and cultural diversity, and human interactions with the physical environment;
- Preparing students to better appreciate local, regional, and global affairs by promoting attainment of knowledge and modes of thought that will help individuals make meaningful lifetime decisions;
- Educating students so that they are successful in either further academic study or professional employment;
- Offering extracurricular learning experiences, including geographically oriented internships and seminars by internationally renowned geographic scholars, that promote academic excellence and cultural diversity; and
- Using educational approaches that permit the communication and application of basic geographic concepts and techniques that have broad implications for other disciplines.

The benefits of the graduate program at K-State include a balanced curriculum and a commitment to a broad-based approach to geographic research and scholarship. The moderate size of the department fosters an informal, friendly atmosphere with the opportunity to work closely with faculty. Teams of students and faculty frequently collaborate on research and publications. A graduate certificate in GIScience is also available, which can be earned as a stand-alone certificate or in conjunction with a master's or doctoral degree.

The department is centrally located on campus in Seaton Hall near the libraries, most classrooms, and the Student Union. Departmental resources include the Geographic Information Systems/Spatial Analysis Laboratory (GISSAL) for geospatial analysis, the Remote Sensing Research Lab, with capability for collection and analysis of imagery and proximal remote sensing data, the Paleoenvironment Lab, with a full suite of instrumentation for sediment and pollen analysis, The Soil-Geomorphology lab, equipped to characterize pedogenic and geomorphic processes, and the Geospatial Teaching Lab, equipped for interactive and distance teaching across the range of GIScience. Software resources for research and teaching include a campus site license from ESRI and a range of widely used statistical and remote sensing programs.

Admission procedures and requirements

For complete information on how to apply to a geography graduate program, visit the Department of Geography and Geospatial Sciences.

Regular admission to the Graduate School and the Department of Geography and Geospatial Sciences requires a 3.0 grade point average on a 4.0 scale, three letters of recommendation, official transcripts, and a one- to two-page statement of interests and objectives. Admission to the graduate program is contingent upon the willingness of a geography faculty member to serve as the student's advisor. The Graduate Program Committee, currently consisting of Drs. Audrey Joslin (director), Langston, Smirnova, and Lu, administers the admissions process. Ph.D. students who have not completed the master's degree by the end of their first semester in the Ph.D. program are subject to dismissal. In some cases, applicants with less than a 3.0 grade point average may be admitted to the M.A. program on a probationary basis.

For non-degree applicants the Department of Geography and Geospatial Sciences requires official transcripts, a one- to two-page statement of interests and objectives, and two letters of recommendation.

Student applicants should Graduate School application deadlines, which are usually earlier for international students. The faculty contact for questions about admission is Dr. Audrey Joslin (ajoslin@ksu.edu).

Financial support

Several positions as a Graduate Teaching Assistant (GTA) or Graduate Research Assistant (GRA) are available each year on a competitive basis for nine-month appointments; some support may also be available for summer months. Full-time GTAs receive a stipend, a full tuition waiver and a start-of-year Steve R. Kale scholarship. GRAs, supported from geography faculty research grants, receive a stipend, tuition support, and a tuition reduction from out-of-state to in-state rates. A limited number of competitive Timothy R. Donoghue Scholarships may also be available from the Graduate School to enhance graduate stipends; the Department of Geography applies for these on behalf of qualified students.

Graduate assistantships are generally awarded for two years for M.A. students and three years for Ph.D. students, contingent upon satisfactory performance of the GTA or GRA duties and academic progress, including the achievement of a minimum cumulative 3.33 grade point average in graduate studies at Kansas State University. Doctoral students may be eligible for a fourth year of GTA funding, depending on the needs and resources of the department and their performance. For a student to receive a fourth year of GTA funding the student must have demonstrated good departmental citizenship and high-quality teaching. The student must also have achieved PhD Candidacy by passing the preliminary examination and presenting an acceptable dissertation proposal before February 1 of the student's third academic year.

Graduate Teaching Assistant Guidelines:

- GTA assignments are made by the Department Head in consultation with the Graduate Program Committee and faculty. Tasks generally include teaching lecture or lab sections, or providing assistance for faculty who are teaching large enrollment classes, such as proctoring exams, developing class resources, and other tasks. Most GTAs hold 9-month .5 FTE appointments; this requires 20 hours/week of GTA work during the fall and spring semesters.

Graduate Research Assistant Guidelines:

- Responsibilities are determined by the principal investigator but generally include data analysis, report and manuscript writing, preparation of graphics for professional presentations, attending meetings on the research project, and completing hardware and software maintenance.

Career opportunities

Career opportunities in geography are diverse and employment prospects after receipt of the master's or Ph.D. degree are excellent. Employment opportunities include positions in business, government, and education.

Federal agencies, such as the Environmental Protection Agency, National Imagery and Mapping Agency, Defense Intelligence Agency, Bureau of the Census, and Bureau of Land Management employ numerous geographers each year. State and local agencies employ geographers with specialties in many areas, including environmental geography, physical geography, health, cultural geography, planning, and spatial techniques.

The geographer's training in location analysis, social and environmental problems, and a variety of spatial techniques including remote sensing, geographic information systems, and computer cartography, make the geographer particularly valuable in the private sector. Job titles such as geographic information systems manager, environmental planner, market researcher, and risk analyst are just a few of the varied positions held by geographers in business.

Graduates of the department have also achieved success in teaching and/or research positions at public and private educational institutions. PhD graduates of the department, for example, are employed as professors at a variety of universities, including Auburn University, Fort Hays State University, Kansas State University, Macalester College, Morehead State University, Auburn

University, University of North Dakota, Saginaw Valley State University, Frostburg State University, and Jacksonville State University.

Faculty-Graduate Student Liaison

The Faculty-Graduate Student Liaison will serve a one-year term, potentially renewable, from July 1 to June 30. The Liaison will be selected by the graduate students, subject to faculty approval. The student officers of the local chapter of Gamma Theta Upsilon, the international geographical honor society, also handle some of the responsibilities listed below, thus the Liaison must coordinate the implementation of these responsibilities with GTU officers.

Responsibilities include:

- Fostering an atmosphere of collegiality and respect among all departmental citizens.
- Enhancing the communication of graduate program issues and events among the faculty, department head, graduate program director, and graduate students.
- Coordinating graduate student involvement in departmental events, such as lunches and receptions for visiting speakers, graduate school fairs, open house, and the alumni board meeting.
- Attending faculty meetings, except for closed sessions; raising issues of interest to graduate students; and communicating with graduate students about the content of these meetings.

General Requirements

Program Advising

Each new graduate student will be assigned an initial graduate advisor to assist in planning the student's graduate program. A student may select another faculty member to become the student's primary advisor at any time, contingent upon the willingness of the faculty member to serve as the advisor. In accordance with Graduate School regulations, a copy of the student's Program of Study together with the names of the major professor and committee members should be filed with the Graduate School after completion of at least nine graduate hours. The program of study is typically filed in the second semester, for an MA student, and no later than the fourth semester for a doctoral student. (The terms major professor, thesis/report/dissertation supervisor, committee chair, and advisor are used interchangeably.)

The M.A. degree supervisory committee must include a minimum of three faculty members, all of whom may be geographers. The thesis supervisor is typically the graduate advisor for the duration of the program of study. The doctoral supervisory committee must include a minimum of four faculty members, one of whom must be from a department other than geography, i.e., a non-geographer. The Graduate School, based upon a request from the student's committee chair, must approve any committee members from other universities. All members of a supervisory committee must have Graduate Faculty status at Kansas State University; for a list see: <https://www.k-state.edu/geography/people/index.html>.

Graduate Program Meetings

The program meeting is an evaluation of the student's past academic experiences and discussion about the student's program objectives. The planning meetings serve as a foundation from which to plan the program of study, obtain recommendations for course work beyond that required in the program of study, and discuss progress toward the degree and completion of the report, thesis, or dissertation. Their first semester meeting will be with the student, advisor, and any other faculty invited by the advisor. During each semester thereafter the program meeting will include the faculty on the supervisory committee. Graduate students are also required to submit an annual progress report.

Transfer Credits

The Geography and Geospatial Sciences Department may accept up to a maximum of ten credit hours of graduate credit from another university. Only courses that logically fit the student's program of study will be accepted, based on a majority vote of the supervisory committee.

Seminars in Geography

For purposes of program requirements the following courses in geography are considered graduate level seminars. This list is subject to change. Please see your advisor for information about seminars that are likely to be offered during your semesters of residence. Seminar in Regional Geography (680), Topics in Remote Sensing (711), World Population Patterns (715), Geography of Land Use (720), Geography of Water Resources (725), World Agricultural Systems (730), Topics in Climatology (735), Urban Geography (750), Human Impact on the Environment (760), Geography of Natural Hazards (765), Perception of the Environment (770), Cultural Geography (780), Seminar in Cultural-Economic Geography (790), Rural Population Geography (815), Rural Geography (830), Rural Economic Development (835), Advanced Environmental Geography (840), Rural Cultural Geography of the U.S. (855), Rural Medical Geography (865), Western Landscapes (870), Spatial Data Analysis and Modeling (880), Advanced Spatial Analysis Techniques (890), Methods, Theory, and Models in Geography (900).

Grade Requirements

Graduate School regulations require students to 1) have a cumulative GPA of 3.0 or higher on graduate course work and on course work in the Program of Study, 2) meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and 3) be enrolled during the semester in which the degree requirements are completed. The Department of Geography and Geospatial Sciences requires all graduate students receiving funding as a GTA or GRA to maintain a minimum cumulative GPA of 3.33 in coursework at Kansas State University.

Credit/No Credit Grading

Graduate School regulations pertaining to the taking of courses by graduate students on a credit/no credit basis are highly restrictive. In the Geography and Geospatial Sciences Department, only the Master's Report (GEOG 898), the Master's Thesis (GEOG 899), and the Ph.D. Research in Geography (GEOG 999), may be taken on a credit/no credit basis. Very few courses in other departments have been similarly designated for credit/no status for graduate credit; most of the 600 and 700 level courses shown in the course schedule that are available for credit/no credit grading are so indicated only in reference to undergraduate credit. In any case, no more than three hours of such credit (excluding the Report, Thesis, or Dissertation) may appear on the program of study. Independently of the program of study, additional courses may be taken on a credit/no credit basis with the approval of the professor offering the course. These courses may not be applied toward a degree.

A/Pass/Fail

Only courses beyond those listed on the program of study may be taken on A/PASS/F basis with the approval of the major professor and the professor offering the course. These courses may not be applied toward the requirements for an MA or Ph.D. degree.

Course Load

Students should choose their course load for any given semester in consultation with their advisor. All geography graduate students in residence are required to enroll in GEOG 800 (Graduate Seminar in Geography) each semester. Graduate Teaching and Research Assistants are required by the Graduate School to carry a minimum program of 6 credit hours per semester, and those holding a 5/10 time assistantship may not take more than 10 credit hours of course work during each semester. The Geography and Geospatial Sciences Department requires that GTAs take at least six credit hours each semester in courses that are either a part of, or relevant to, the student's program of study.

Independent Study

Graduate School regulations place a limit of 3 credit hours of independent study which may be counted as part of the hours required for the MA and 6 credit hours for the Ph.D. degree excluding, however, the thesis, dissertation, or report hours. A student's advisor may petition the Graduate School for an exception to these limits.

Visiting Scholars

In order to broaden the graduate students' experience with various specialties in geography, and various methodological outlooks, the Department invites four or more geographers a year to visit our community. Ordinarily, such a visit will include a public lecture, a departmental seminar, a student luncheon, and an informal evening gathering often at a faculty member's home. Graduate students in residence are expected to attend all departmental speaker events as part of their enrollment in GEOG 800 (Graduate Seminar in Geography). In the event an unavoidable conflict arises regarding attendance at any of the scheduled events, the student should give prior notice to the advisor.

Thesis and Dissertation Proposals

Students will prepare a thesis or dissertation under the direction of a supervising faculty member. The supervisor will certify that a written proposal is acceptable for presentation to the assembled departmental faculty and graduate students. Students in the M.A. thesis option must present a thesis proposal as part of Geographic Research Methods (GEOG 821). In addition, students pursuing the non-thesis option must present a research proposal in Geographic Research Methods. The student's desire to pursue the thesis or non-thesis option must be made known to the faculty before the presentation. Following the presentation, thesis supervisory committee will discuss with the student the necessary proposal revisions, if any, and appropriate next steps in the research. Prior to the preliminary examination, Ph.D. students will complete a written dissertation proposal and publicly present it to the supervisory committee, other faculty, and other students. An oral presentation of the proposal will be conducted before the supervisory committee, other faculty, and students.

As regular faculty carry nine-month appointments (mid-August through mid-May), there should be no expectations on the part of the student that members of the faculty will be available during the summer term for presentation of proposals, preliminary exams (either oral or written), final oral exams, or thesis or dissertation defenses. Participation in such activities is voluntary and at the discretion of individual professors.

As a thesis or dissertation topic is developed, the student should consult closely with and seek approval from the major professor. The members of the graduate supervisory committee should be selected based on consultation with the major professor and the department head. The thesis or dissertation supervisor will assume the duties of major professor (advisor) for the remainder of the student's program. Students should work with their advisor to establish a complete committee. It is the student's responsibility to inquire as to whether or not a faculty member is interested in serving on the committee.

Enrollment During Final Term

Graduate School regulations specify that students must be enrolled for the term in which their degree requirements are completed. This requirement may be met by enrolling in one additional hour of either Geography 898, 899 or 999 during the term the student expects to receive his or her degree. This applies even for students who leave campus before the end of the term. Note, however, that the Ph.D. Candidate must maintain continuous enrollment (at least 1 hour each spring and fall semester) from the completion of the preliminary exam until the Graduate School accepts the dissertation. A student who misses the normal deadlines for graduation within a term but who completes all the requirements before the end of that term is not required to enroll for a subsequent term.

Inactive Status

A student not yet admitted to candidacy will be considered inactive if he or she has not enrolled for two consecutive years. Once in inactive status a student must reapply to (and be accepted into) a graduate program before being considered for re-entry by the Graduate School. In order to be allowed to resume graduate studies, the student must meet all requirements for entry in force at the time of the new application. Inactive students who seek to regain active status will not, however, be required to recreate

materials submitted with their original applications and held in their files by the Graduate School. If allowed to regain active status, the formerly inactive student will be subject to all requirements in force in the graduate program and in the Graduate School at the time the student returns to active status.

Doctor of Philosophy

Geography (PHD)

The Geography and Geospatial Sciences Ph.D. at Kansas State University is designed to develop and enhance a student's knowledge and ability to conduct original independent research that makes a scholarly contribution to the student's areas of specialization. The Ph.D. program fosters:

- an understanding of scientific inquiry
- knowledge of the structure of the geographic discipline, its history, issues, methods, and trends;
- proficiency in appropriate analytical and technical skills; and
- competency in communicating the results of research

Admission Requirements

Applicants to the Ph.D. program are expected to have earned a master's degree with a thesis or equivalent and can count 30 credits of the master's toward the 90 credits required for the doctorate. Students who have not completed a master's degree by the end of their first semester in the Ph.D. program will be subject to dismissal. Students without a previous degree in geography are encouraged to apply. Students without previous course work in human geography, physical geography, and spatial techniques, may, however, be required to add hours to their program of study. If a student has not previously taken a course in the history and philosophy of geography, the student will be required to take GEOG 820 as part of the program of study. The addition of hours to a program of study is determined on a case-by-case basis during the program planning interview in the student's first semester and will reflect the faculty's appraisal of the student's experience and needs. Courses taken to strengthen the student's background in geography may count toward the 30 credit hours of course work required for the Ph.D., but only if approved by the student's graduate committee.

Students will complete a minimum of 60 credit hours beyond the master's degree: at least 30 credit hours of course work and 30 credit hours of dissertation research.

All students seeking the Ph.D. in geography will complete the following requirements:

Course Requirements

1. Required courses

These courses must be taken while in residence.

- Two 3-credit hour research seminars in geography at the 800-level or above. **Credits:** (6)
- GEOG 900 - Methods, Theory, and Models in Geography **Credits:** 3

2. 800-level course requirement

No more than 6 credit hours of 500-level courses are permitted in a Ph.D. program, but no 500-level geography course may appear in the program of study.

Not more than 6 hours of independent study or other individualized courses should ordinarily appear on the program of study for the doctoral program. For exceptions to this, the chair of a student's supervisory committee should write a memo to the Graduate School that accompanies the program of study and explains the reasoning for the exception request.

3. Non-Geography course requirement

At least three hours must be taken in a department other than geography. Preferably, a course will be taken from a faculty member who will serve as the outside member of the supervisory committee.

4. Residence requirement

Students must spend at least one full academic year in residence.

5. Dissertation proposal

Students must complete a written dissertation proposal and present it orally before the supervisory committee, other faculty, and students. Following the public presentation, the supervisory committee and the student will discuss the appropriate revisions to the proposal, if any, and the next steps in the research.

6. Preliminary examination

To be eligible to schedule the preliminary examination, the student must:

- a) have an approved program of study on file with the Graduate School,
- b) have completed a satisfactory written dissertation proposal and presented it orally, and
- c) have completed 21 hours of graduate course work on the program of study, with a grade point average of 3.33 or better.

To schedule the preliminary exam, the student and major professor must complete the "Request for Preliminary Examination Ballot." The student and major professor should submit this form to the Graduate School one month prior to the date of the oral portion of the exam. The preliminary exam must be completed at least 7 months prior to the final defense of the dissertation. The examination covers the student's fields of specialization as defined by the student's doctoral committee. It will include both a written and an oral portion. Performance on the examination must provide evidence of the student's mastery of the subject in four sub-fields as defined by the supervisory committee, knowledge of related geographic literature, and an understanding of research theory and methods. Copies of the examination are filed with the department and made available on request to any graduate faculty member for a period of two years from the date of examination.

7. Ph.D. candidacy

Passing the preliminary examination is required for the student to become a doctoral candidate.

The period of candidacy may last up to five years from the end of the semester in which the preliminary exam was passed. If a student fails to complete both the dissertation and final oral examination within this period, the student will be dropped from candidacy. The Ph.D. Candidate must maintain continuous enrollment (at least 1 hour each spring and fall semester) from the completion of the preliminary exam until the Graduate School accepts the dissertation.

8. Ph.D research hours requirement

Students must complete 30 credit hours of GEOG 999.

- GEOG 999 - PhD Dissertation Research **Credits: 1-18**

9. Dissertation defense/final examination

The dissertation will be a cohesive, original, and independent contribution to scholarship. The research is to be performed under the guidance of the major professor and the supervisory committee and must be acceptable to them and to the Graduate School representative, who chairs the final examination. The dissertation must follow guidelines outlined by the Graduate School.

A final oral examination in defense of the dissertation will be conducted and evaluated by the supervisory committee. Two weeks prior to the dissertation defense, copies of the defense draft will be distributed to the supervisory committee and one will be placed in the department office for review by other faculty and graduate students. Other faculty and students are encouraged to attend the public presentation at the defense.

Sample Doctoral Program:

First semester

- 800-level research seminar in Geography - Credits: (3)
- GEOG 999 - Credits: (1)
- Program Meeting with potential committee members
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**
- GEOG 820 - Geographic Thought **Credits: 3**
- GEOG 830 - Seminar in Rural Geography **Credits: 3**

Second semester

- 800-level research seminar in Geography - Credits: (3)
- GEOG 999 - Credits: (1)
- Elective course - Credits: (3)
- Form Supervisory Committee
- Submit doctoral program of study to the Graduate School
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**
- GEOG 900 - Methods, Theory, and Models in Geography **Credits: 3**

Third semester

- Write dissertation proposal
- 800-level non-Geography seminar - Credits: (3)
- GEOG 999 - Credits: (4)
- Program Meeting with Committee

- Elective course - Credits: (3)
- GEOG 800 - Graduate Seminar in Geography Credits: 0

Fourth semester

- Present dissertation proposal (early in the semester)
- Elective course - Credits: (3)
- Elective course - Credits: (3)
- GEOG 999 - Credits: (4)
- Preliminary Exam (late in the semester)
- GEOG 800 - Graduate Seminar in Geography Credits: 0

Fifth semester

- GEOG 999 - Credits: (10)
- Program Meeting with Committee
- GEOG 800 - Graduate Seminar in Geography Credits: 0

Sixth semester

- GEOG 999 - Credits: (10)
- Defend Dissertation (Final Examination)
- GEOG 800 - Graduate Seminar in Geography Credits: 0

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Geographic Information Science Graduate Certificate

Contact: J.M. Shawn Hutchinson

E-mail: shutch@ksu.edu

Geographic information systems (GIS) are an organized collection of computer hardware, software, geographic data, and people designed and organized to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information. Effective use of geographic information systems (GIS) has evolved into a requisite skill in most academic research, as well as for agencies in both the public and private sectors. Graduate students from such varied disciplines as agronomy, biological sciences, economics, engineering, geography, landscape architecture, and sociology benefit from applying GIS and related technologies such as global positioning systems (GPS), remote sensing, geostatistics, and computer programming to input, analyze, model, and display (map) location-based data.

Offered through the Geography and Geospatial Sciences graduate program, the Graduate Certificate in Geographic Information Science (GIScience) is designed to provide graduate students with the knowledge and skills necessary to succeed in the rapidly

expanding field of GIScience or apply GIScience concepts in their own field of study. Three components comprise the program curriculum: A set of prerequisites to gain entry into the program, core geospatial courses focusing on geographic information systems (GIS) and satellite remote sensing, and a set of elective courses that allow for the exploration of advanced themes in GIScience and/or the application of GIScience in geography or related disciplines. The Graduate Certificate in GIScience may be awarded as a "stand-alone" certificate or in conjunction with the completion of graduate degree requirements in one of the academic units at Kansas State University. The certificate program is administered by the Department of Geography and Geospatial Sciences and is supervised by a multidisciplinary group of instructors and researchers from across the K-State campus.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

- Competence in cartography, thematic mapping, or geodesy, or geomatics (e.g., GEOG 302)
- Competence in basic statistics (e.g., STAT 320, STAT 330, STAT 250)
- Competence in object-oriented computer programming (e.g., Python)

Special Requirements

The supervisory graduate faculty for the Graduate Certificate of GIScience represent a multidisciplinary group of instructors and researchers from across the K-State campus. Other interested faculty are encouraged to participate in the certificate and can contact the certificate coordinator if they are interested in having their name included.

A limited number of graduate research and/or teaching assistantships may be available to qualified students through participating departments. In addition, corporate- and industry-sponsored scholarships may be available to exceptional applicants. Contact the certificate coordinator for further details.

Course Requirements

The course requirements for the Graduate Certificate in GIScience are shown below. A minimum of 15 graduate credit hours is required to earn the certificate. A maximum of two geospatial core courses may be waived and replaced with approved electives in cases where students have completed prior coursework for undergraduate credit. A minimum of 12 hours at the 600-level or higher is required. Students must earn a minimum GPA of 3.33 in the geospatial core to earn the certificate.

Required Courses

10 credit hours

- GEOG 508 - Geographic Information Systems I **Credits: 4**
- GEOG 605 - Remote Sensing of the Environment **Credits: 3**
- GEOG 608 - Geographic Information Systems II **Credits: 3**

Elective Courses

In addition to the Geospatial Core courses, students enrolled in the Graduate Certificate on GIScience program must take a minimum of 6 additional credit hours of electives consisting of courses in intermediate/advanced GIScience or application courses with a major emphasis on the use of geospatial technologies. Elective requirements may be satisfied from the following

course list or, in some instances, be met through special topics or independent study courses with significant geospatial content (must be approved by the certificate coordinator). Select two (minimum of 6 credit hours):

- AGRON 655 - Site Specific Agriculture Credits: 3
- BAE 669 - Watershed Modeling Credits: 3
- BAE 869 - Advanced Watershed Modeling Credits: 3
- BIOL 822 - Landscape Ecology Credits: 4
- CE 585 - Civil Engineering Project Credits: 3
- CE 752 - Advanced Hydrology Credits: 3
- CE 786 - Land Development for Civil Engineers and Planners Credits: 3
- CE 857 - Advanced Civil Engineering Design Using GIS Credits: 3
- CIS 501 - Software Architecture and Design Credits: 3
- CIS 560 - Database System Concepts Credits: 3
- CIS 635 - Introduction to Computer-Based Knowledge Systems Credits: 3
- CIS 636 - Introduction to Computer Graphics Credits: 3
- CIS 736 - Computer Graphics Credits: 3
- CIS 761 - Data Base Management Systems Credits: 3
- COT 674 - Processing Techniques for Low-Altitude Remotely Sensed Data Credits: 3
- COT 676 - Low-Altitude Remote-Sensing Product/Project Development Credits: 3
- DMP 725 - GIS (Geographic Information System) Applications in Animal and Public Health Credits: 2
- DMP 726 - GIS (Geographic Information System) Applications in Animal and Public Health Lab Credits: 1
- GEOG 602 - Computer Mapping and Geographic Visualization Credits: 3
- GEOG 610 - Geography Internship Credits: 1-6
- GEOG 700 - Quantitative Analysis in Geography Credits: 3
- GEOG 705 - Thematic Remote Sensing. Credits: 3
- GEOG 706 - Biophysical Remote Sensing Credits: 3
- GEOG 707 - Remote Sensing of Water Credits: 3
- GEOG 709 - Geography Field Research Techniques Credits: 2-3
- GEOG 711 - Topics in Remote Sensing Credits: 3
- GEOG 712 - Internet GIS and Distributed Geographic Information Services Credits: 3
- GEOG 728 - Programming for Geographic Analysis Credits: 3
- GEOG 742 - Digital Geomorphology Credits: 3
- GEOG 790 - Seminar in Geography Credits: 1-3
- GEOG 795 - Topics in Geographic Information Science Credits: 1-3
- GEOG 808 - Geocomputation Credits: 3
- GEOG 880 - Spatial Data Analysis and Modeling Credits: 3
- GEOG 890 - Advanced Spatial Analysis Techniques Credits: 3
- GEOG 895 - Topics in Spatial Analysis Credits: 1-3
- LAR 580 - Planning and Design Intro to GIS Credits: 2
- LAR 704 - Environmental Landscape Planning and Design Credits: 3
- PLAN 801 - Knowledge Methods Credits: 3
- PLAN 836 - Plan Making Credits: 5
- STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 726 - Introduction to R Computing Credits: 1

- STAT 764 - Applied Spatio-Temporal Statistics Credits: 3
- STAT 903 - Statistical Methods for Spatial Data Credits: 3

Graduation Requirements

The Graduate Certificate in GIScience **may be awarded as a "stand-alone" certificate or in conjunction with the completion of advanced graduate degree requirements** in one of the academic units at Kansas State University. To be awarded a graduate certificate in GIScience, the student:

1. Must not be on probation,
2. Must have a cumulative grade point average (GPA) of 3.0 or higher on graduate coursework (if applicable), and
3. Must be enrolled during the semester in which the certificate requirements are completed.

In order to ensure that certificate recipients display a strong command of GIScience, the certificate is granted only to those graduate students who earn **a minimum cumulative GPA of 3.33 in the Geospatial Core courses** that comprise the Graduate Certificate in GIScience program. The GPA for certificate purposes will be computed in accordance with Kansas State University policy.

Courses may be waived in consultation with the certificate coordinator and academic advisor if the student can demonstrate satisfactory completion of similar coursework or significant professional experience in the area. If transfer courses are to be used to meet program requirements, the student *must* furnish the program director with a certified university transcript and, in some instances, a copy of the class syllabus. A maximum of **6 transfer credit hours** may be used to meet program requirements.

Upon approval by the certificate coordinator, course credits earned before the student entered the certificate program may be applied to the Graduate Certificate in GIScience. Graduate students, and post-baccalaureate students returning to acquire the certificate, **may be asked to repeat** any of the prerequisite, geospatial core, and/or elective courses completed **more than five years** prior to the semester in which the certificate requirements are finished.

Total Hours Required for Graduate Certificate: 15

Master of Science

Geography (MS)

Program objectives

The Master of Science degree in Geography at Kansas State University is designed to further develop the student's understanding of geographic perspectives and to assist the student in identifying and addressing specific and significant geographic research questions.

Students without a previous degree in geography are encouraged to apply. Students without previous course work in human geography, physical geography, and spatial techniques, may, however, be required to add hours to their program of study. The addition of hours to a program of study is determined on a case-by-case basis during the program planning interview in the student's first semester and will reflect the faculty's appraisal of the student's experience and needs. Courses taken to strengthen the student's background in geography may count toward the course work required for the M.A., but only if approved by the student's graduate committee.

Special Requirements

Final Examination

All master's students will take a final oral examination administered by the supervisory committee. Other faculty and students are encouraged to attend the public presentation portion of the examination.

For students completing the thesis option, the examination consists of a defense of the thesis, including its relationship to geography. Two weeks prior to the final examination the written thesis will be available for review by the supervisory committee, other faculty, and graduate students.

For students completing one of the report options, the examination consists of a defense of the report and a comprehensive examination on the student's areas of study and geography.

Course Requirements

Students may choose, in consultation with their advisors, one of the three programs leading to the M.S. degree. For most students, the Department of Geography encourages completion of the thesis option.

Required Courses

The two required courses for the MS degree are: GEOG 700 - Quantitative Analysis in Geography (Though this is not required for students in the Report Option for Teachers), and GEOG 821 - Research and Professional Development in Geography. Additionally, the Graduate School stipulates that students may include no more than three credits of independent study coursework on the program of study, and at least 18 hours of the coursework on the program of study should be at the 700 level and above. All geography students in the Master of Science degree program are required each semester to enroll in GEOG 800 - Graduate Seminar in Geography.

- GEOG 700 - Quantitative Analysis in Geography **Credits: 3**
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**
- GEOG 821 - Research and Professional Development in Geography **Credits: 3**

Thesis Option Courses

This option requires 30 hours of graduate credit including 6 hours of credit for a thesis. Of the 24 hours of credit required in course work, at least 15 hours must be in geography. Three research seminars in geography (3 credit hours each) are required, with at least one at the 800 level.

Sample master's thesis program

1st Semester

- Geography research seminars (one of the three geography seminars must be at the 800 level) - Credits: (6)
- Elective course - Credits: (3)
- Program Meeting with possible committee
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**

2nd Semester

- Elective course - Credits: (3)
- Form supervisory committee (early in the semester)
- Program Meeting with committee to discuss approval of thesis proposal (end of semester)
- Submit program of study to the Graduate School

- Develop and present thesis proposal in GEOG 821
- GEOG 700 - Quantitative Analysis in Geography **Credits: 3**
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**
- GEOG 821 - Research and Professional Development in Geography **Credits: 3**

3rd Semester

- Geography research seminar - Credits: (3)
- Elective courses - Credits: (6)
- Program Meeting with committee
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**

4th Semester

- Defend thesis (final examination)
- GEOG 899 - Credits: (6)
- GEOG 800 - Graduate Seminar in Geography **Credits: 0**

Report Option Courses

This option is a nonthesis program designed for students who have a specific professional goal in mind and who do not intend to continue for a doctorate. A student must consult with their advisor to arrange a program of study that is acceptable to the supervisory committee. Thirty-two hours of graduate-level work are required, including a two-credit hour Master's Report (GEOG 898). Up to twelve hours may be outside the geography department. The student must complete at least one course, which may include independent study, with each member of the supervisory committee.

Procedures relating to the preparation of a master's report are almost identical to those relating to the thesis, including the formal proposal of the topic, except that approval of the topic may be given by the individual faculty member supervising the report.

- GEOG 898 - Master's Report **Credits: 2**

Report Option for Teachers

This option is for students who intend to pursue or continue careers in public school or junior college teaching. It is open to persons who are already certified to teach at the public school or junior college level in any state and to those who will make courses required for such certification an integral part of their program. Thirty-two hours of graduate-level work are required, including a two-credit hour Master's Report (GEOG 898). The master's report shall consist of the design of a teaching syllabus in a sub-field of geography in conjunction with a faculty member in the College of Education, or a research project concerning geographic education. During their residence, students are required to present three lectures in Department of Geography courses, with no more than two of the lectures in the same course. One academic credit (under GEOG 850, GEOG 860, or GEOG 870) will be awarded for this activity. The student must complete at least one course, which may include independent study, with each member of the supervisory committee. This option is not suitable for any student who may continue for a doctorate degree.

- GEOG 898 - Master's Report **Credits: 2**

Total Hours Required for Master's: 30-32

Geology

Matthew Brueseke, Interim Head
Joel Spencer, Director of Graduate Studies

108A Thompson Hall
785-532-6724
Fax: 785-532-5159
<http://www.ksu.edu/geology/>

Program description

The Master of Science degree in geology is the level of professional education needed by today's career geologists in corporate or government employment. It is also a routine stepping stone for geologists continuing their studies for the doctoral degree. At K-State the Department of Geology encourages the student to select an area of interest, guides him or her through 24 (or more) credit hours of course work to develop essential skills in that area (including study in supporting sciences where appropriate), and supervises the completion of 6 credit hours of research that will culminate in a written thesis. We maintain active research programs in a wide range of geoscience subdisciplines including chemical hydrogeology, petroleum geology, exploration seismic and near surface geophysics, structural geology, economic geology, igneous petrology, volcanology, isotope geochemistry, climate change, tidal sedimentation processes, luminescence dating, biomineralization, and biogeochemistry.

The department presently has nine full-time graduate faculty members and approximately 20 graduate students. The alumni of the geology department have shown their support and their generosity by endowing more than 20 scholarships. In recent years, the total scholarship funding for geology majors and graduate students has averaged ca. \$100,000, with individual awards ranging from \$500 to \$5,000. The department also has 11 graduate teaching assistantships, which include a waiver of tuition. Some department funds are available to support field research and the presentation of student papers at meetings. Scholarship support is also available from several regional societies and organizations.

K-State's Department of Geology has active collaborations through a number of organizations, especially the Kansas Geological Survey and the U.S. Geological Survey. Other collaborations are sometimes available through neighboring universities and the geological surveys of other states. We also encourage our students to take advantage of corporate internships to further their research projects.

The department has a range of research instrumentation and Thompson Hall has recently been upgraded to include a suite of new geochemistry research labs (see below).

Computer laboratory

The Thompson Hall computer laboratory is available to all geology majors and contains computers, scanners, printers, and plotters. Computers with industry software in the laboratory are used for exercises in geophysics, petrology, petroleum geology, and geochemical modeling courses. A 44" plotter is also available in Thompson Hall and used to print posters for presentation. We will be moving to new teaching spaces during 2025-2026 in Willard Hall.

Research laboratories

Thompson Hall laboratories contain equipment used for cutting and crushing rock, sectioning and polishing, and other rock sample preparation tasks. Binocular and petrographic microscopes, which include fixed digital cameras, are available for collecting sample images. Recently refurbished geochemistry and microbiology laboratories include access to fume hoods, analytical balances, drying ovens, centrifuges, an anaerobic chamber, and two ultra-pure water systems. We will be moving to new research labs during 2025-2026 in the Chemistry-Biochemistry Building.

Analytical instruments

Analytical instruments available in Thompson Hall currently include:

- X-Ray Diffractometer (PANalytical Empyrean) that can analyze both amorphous and crystalline solid-phase samples using numerous techniques
- Renishaw inVia Raman microscope
- Bruker Tracer III hand-held X-Ray Fluorescence
- Fully-automated luminescence dating system (model no. Risø TL-DA-20C/D)
- Gas chromatograph (Gow Mac 580 series) used for gas compositional analysis
- Ion chromatography system (Dionex ICS-1100) capable of analyzing a wide range of solutes in water samples
- UV-Vis spectrophotometers also used for water chemistry analyses
- Digital inverted fluorescence microscope (EVOS) for capturing multi-channel fluorescence images at high resolution

Field equipment

Other research facilities available on campus

Numerous other research facilities are also available on campus. An extensive list is found **here**. On-campus facilities used regularly by Geology students and faculty include:

Field equipment

Field equipment available in the department for undergraduate and graduate research include:

- Hand-held transits
- GPS devices
- Water level meter
- Water quality monitoring devices
- Topcon GTS-229 laser total station
- Proton precession magnetometer
- Ground-penetrating radar system with antennae for two different depth ranges
- Worden gravimeter
- Electromagnetic sensor
- Seismic reflection/refraction system

Other research facilities available on campus

Numerous other research facilities are also available on campus. On-campus facilities used regularly by Geology students and faculty include the TRIGA Mark II pulsing reactor (Neutron Activation Analysis), the Stable Isotope Mass Spectrometer Lab and Microscopy Lab in the Division of Biology, the Integrated Genomics Facility and Soil Testing Lab in the Department of Agronomy, and the Electron Microscopy Lab in the College of Veterinary Medicine.

Applications

Applications (forms downloadable from the graduate school website) to the M.S. program should be accompanied by (1) official transcripts from all colleges attended; (2) three letters of recommendation; (3) GRE replacement questions; and (4) a statement of career goals and interests. Please see this page for more details on application materials and the process: <https://www.k-state.edu/geology/academics/graduate/>.

International applicants should refer to the graduate school website for additional requirements. Applications for financial assistance should be received by January 8th for both domestic and international applicants.

Graduate Certificate

Mineral Exploration for a Sustainable Future Graduate Certificate

Certificate students must be admitted as full time graduate students. Application for admission must be made to the Graduate School. Students must earn a minimum GPA of 3.00 in the Mineral Exploration Core to earn the certificate. Courses counted towards the completion of one Certificate may not be double counted towards the completion of a second Certificate or completion of Master degree. Admission requires a BS in Geology or related field and a minimum of 2.8 GPA at undergrad level.

The course requirements for the Graduate Certificate in Mineral Exploration for a Sustainable Future are as follow. A minimum of 18 graduate credit hours is required to earn the certificate. **A maximum of two core courses may be waived and replaced with approved electives in cases where students have completed prior coursework for undergraduate credit.** A minimum of 12 hours at the 600-level or higher is required.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Geology at Kansas State University.

Admission Requirements

A Bachelor in Geology is required to be admitted to the program. Student should have completed at least courses such as Petrology, Structural Geology, Field Camp, or equivalent courses. Admission requires a B. Sc in Geology or related field and a minimum of 2.8 GPA at undergrad level.

Graduation Requirements

A minimum of 18 graduate credit hours is required to earn the certificate. Students must earn a minimum GPA of 3.00 in the Mineral Exploration core to earn the certificate. Courses counted towards the completion of one Certificate may be counted towards the completion of a Master degree.

Course Requirements

Required Courses

6 credit hours. Students will have to complete both courses:

- GEOL 701 - Economic Geology **Credits: 3**
- GEOL 802 - Mineral Exploration for a Sustainable Future **Credits: 3**

Personal Project Development

Enrolled student should complete the following course for personal technical skills development in the field of Petrology, Mineralogy, Geochemistry, Geophysics. For this, student will have to work with an advisor among faculties from the department of Geology.

- GEOL 790 - Problems in Geology **Credits: 0-18**

Elective Courses

9 credit hours. Student should select 3 of the following courses:

- GEOG 508 - Geographic Information Systems I Credits: 4
- GEOG 605 - Remote Sensing of the Environment Credits: 3
- GEOG 608 - Geographic Information Systems II Credits: 3
- GEOL 611 - Hydrogeology Credits: 3
- GEOL 642 - Field Geophysics Credits: 3
- GEOL 680 - Field Geology Credits: 3
- GEOL 790 - Problems in Geology Credits: 0-18
- GEOL 805 - Advanced Igneous and Metamorphic Petrology Credits: 3
- GEOL 810 - Isotope Geology Credits: 3

Total Hours Required for Graduate Certificate: 18

A minimum of 18 graduate credit hours is required to earn the Graduate certificate in Mineral Exploration for a Sustainable Future.

Master of Science

Geology (MS)

We offer a Geology M.S. degree for students who want to learn more about a specific area of geology. A graduate degree is an opportunity for students to advance their scientific research skills beyond their undergraduate experience. It can also promote their career options and earning potential.

The Master of Science degree program offers two options: a Thesis option or a Report option.

Graduate Program Director: Dr. Matthew Brueseke, brueseke@ksu.edu

Thesis Option Program Contact: Jillian Tiemeier, jtiemeier2@ksu.edu

Report Option Program Contact: Hunter Rose, huntress@k-state.edu

Admission Requirements

Applicants should have a bachelor's degree in geology or a related field, although students with a strong record and willingness to take additional courses to make up deficiencies in geology and related sciences are encouraged to apply. Few with GPAs below 3.0 (on a scale of 4.0) will be accepted, and grade-point averages of 3.3 or higher are most competitive for financial assistance. Students with GPAs lower than 3.0 may be admitted on a probationary basis in some circumstances. The rules for this are described in detail in the university's Graduate Handbook (<http://www.k-state.edu/grad/graduate-handbook/>).

Prospective candidates must meet both the minimum admission requirements for the Graduate school (<http://www.k-state.edu/grad/admissions/application-process/admit.html>) and for the Geology Department. For example, students with a Geology/Earth Science background must hold a minimum GPA of 3.0 in all Geology/Earth science coursework. All international students admitted must demonstrate the same level of achievement as U.S. students.

Graduation Requirements

The thesis option requires the satisfactory completion of a master's thesis. The thesis option is where a student will research and report an original project, earning 6 credit hours toward the total 30 credit hours required for the degree, with 24 credit hours of course work.

Under the report option, students will not complete a thesis but will be required to satisfactorily complete a substantive research project totaling 2 credit hours, representing a scholarly effort in the research or practice of geology leading to completion of a publicly presented research report.

Course Requirements

There are no required core courses – our M.S. program coursework is designed for students to tailor their coursework to best fit their M.S. research and overall career goals.

Thesis Option Courses

The Thesis option is meant to be more intensive than the report option and is required of all students entering the graduate program as teaching or research assistants.

Of the 30 credit hours required for the Master's degree (Thesis Option) in geology, 24 hours are coursework while 6 hours are M.S. thesis hours (GEOL 899). Of these 30 credit hours, at least 18 credit hours should be at the 700 level or above (including GEOL 899).

Of the 24 coursework credit hours, courses at the 600-level may be included, but 500-level courses in the student's major area are expected to have been completed as undergraduate prerequisites to graduate study or as undergraduate deficiency courses assigned upon admission. Courses at the 500-level outside a student's major area (e.g., Geology) can be applied toward the program of study, provided they do not exceed 6 credit hours in total.

Unless specifically approved by the graduate school, no more than 3 credit hours of problems courses (GEOL 790) or other individualized courses may be applied to the master's degree, and no more than 3 credit hours of credit/no credit or pass/fail (exclusive of research credit hours) may appear on the program of study. Note that while GEOL 790 courses may be used for individualized study, they are not intended as an alternative or extension to the thesis research (GEOL 899 or GEOL 898).

- **GEOL 899 - Master's Thesis Research Credits: 1-6 (6)**

Report Option Courses

The Report option (i.e. Professional Studies Option) is only available to those students who have limited time for completion of a degree and are not contributing to the department's teaching or research efforts. Students choosing this option might include foreign students fully supported by their governments, or military personnel supported by the U. S. government, planning intense courses of study to complete the M.S. degree in the shortest possible time. Other students might include professional educators at the public school or community college level, or professional geologists with full-time employment, planning part-time studies to complete the M.S. degree over a period of years.

Of the 32 credit hours required for the Master's degree (Report Option) in geology, 30 hours are coursework while 2 hours are M.S. report research hours (GEOL 898). Of these 32 credit hours, at least 18 credit hours should be at the 700 level or above (including GEOL 898).

Of the 30 coursework credit hours, formal graded graduate coursework needs to be completed from at least four different graduate instructors. Up to 12 credit hours may be from outside the geology department. No more than 3 of the 30 credit hours may be from directed independent study (GEOL 790 or equivalent). The university also permits transfer of up to 10 credit hours from another institution, provided that certain criteria are met (see University Graduate Handbook, Section D.6 Transfer of Credits). Note that while GEOL 790 courses may be used for individualized study, they are not intended as an alternative or extension to the thesis research (GEOL 899 or GEOL 898).

- **GEOL 898 - Master's Report Research Credits: 1-2 (2)**

Total Hours Required for Master's: 30-32

History

Andrew Orr, Chair

Louise Breen, Director of Graduate Studies

117D Calvin Hall

785-532-6730

hoffice@ksu.edu

<http://www.ksu.edu/history>

Overview

The Department of History offers well-prepared students an exceptional opportunity to work closely with an unusually productive and well-regarded faculty. The department aims to help students find and develop their talents fully and to establish themselves as independent scholars, teachers, and other historical professionals.

The department offers programs of study leading to the master of arts and doctor of philosophy degrees in selected traditional and innovative fields. In addition to various American and European fields, the department's strengths include areas such as gender history and the history of science and technology. An area of particular strength at Kansas State University is military history.

The university's Hale Library has a number of large, specialized collections. In addition, nearby are several excellent research facilities: the Eisenhower Presidential Library in Abilene, with outstanding holdings relating to the Eisenhower administration and recent military history; the Kansas State Historical Archives in Topeka; the Truman Presidential Library in Independence, Missouri, with valuable collections on the Truman administration, the history of the American presidency, and foreign policy; the Linda Hall Library in Kansas City, Missouri, emphasizing materials pertaining to science and the history of science; and the regional Federal Records Center in Kansas City, currently rich in military and civilian records and eventually to have a microfilm duplication of the main holdings of the National Archives in Washington.

The history department encourages its students to engage in broad professional activities. Many students publish in historical journals, present papers at conferences, and speak to off-campus groups while completing their degrees. The history department also has an active internship program. Graduate students can gain valuable "hands-on" experience in institutions such as the Riley County Historical Museum, the Fort Riley Cavalry Museum, the Kansas State Historical Society, and the Dwight D. Eisenhower Library.

Graduate degrees in history have traditionally led to positions in higher education, and students earning the Ph.D. at Kansas State University have effective preparation for careers as teachers and scholars. But a high percentage of history graduate degree holders also enter archival or museum work, historical publishing, governmental official history programs, historical research for private businesses, and professional service as military officers. The history faculty regards such nontraditional careers as legitimate first choices for its students and works with the students to define programs that accommodate these varied objectives.

Degrees

The master of arts requires a minimum of 30 hours beyond the baccalaureate degree, and the program offers three options: 24 hours of course work plus a thesis (6 research hours); 28 hours of course work plus a report (2 research hours); or 30 hours of course work. All candidates for the M.A. must take a course in historiography. Those who write a thesis or report must take two seminars or topics courses and pass an oral or written final examination that centers on the student's research. Those who take the non-thesis degree must take three seminars or topics courses and pass a written final examination over their coursework.

The doctor of philosophy requires completing 30 hours of course work beyond the master's, satisfying the language requirement,

passing the qualifying examination, and writing a sound dissertation based on original historical research that is approved by the student's committee. The qualifying examination includes separate examinations in a geographically and chronologically defined comprehensive field and three special fields. One of the special fields must focus on the student's principal research interests, and another must cover a substantially different geographical area or chronological period than the student's comprehensive field or be from outside history.

Admission

Applicants to graduate programs at Kansas State University must submit an application for admission and provide official copies of transcripts of record from each college or university attended. In addition, all applicants to the programs in history must complete a statement of purpose and provide three letters of academic reference. Scores from the Graduate Record Examination general test will also be taken into consideration.

International students must provide evidence of financial support as required by the Graduate School, and those whose native language is not English must present a score of 600 or better on the Test of English as Foreign Language for admission.

Financial support

Outstanding graduate students in history qualify for fellowships granted by the Graduate School, and some students may be appointed to graduate research assistantships funded by the University or by money from external grants.

The Department of History also offers graduate teaching assistantships to qualified students on a competitive basis. GTAs also receive a full tuition fee waiver. Beginning GTAs work as graders or discussion leaders, and experienced assistants are frequently assigned independent sections of survey courses. Prospective students wishing to be considered for graduate teaching assistantships must complete their applications for admission by December 1.

Prospective students may apply simultaneously for admission to the graduate program and for a GTA. Assistantships are only awarded once a year to begin in the fall semester. Anyone wishing to be considered for an assistantship should indicate that in the space provided at the bottom of the Statement of Objectives form. Only those applying for fall semester admission whose application is received by December 1st of the preceding year will be considered.

Continuing students who do not already hold a GTA may apply by letter to the Graduate Admissions and Awards Committee. They must also provide a letter of recommendation from a member of the faculty, normally the student's major professor. These applicants are reviewed on the basis of their entire record, which includes all of the materials supplied for admission plus their grades and other evidence of their performance in our program, including the required letter of recommendation.

Students who hold an assistantship and seek to have it renewed for another year are likewise expected to apply for consideration, providing a letter of recommendation from the major professor and, for those who have assisted a faculty member, a letter from the supervising instructor. Doctoral students who are seeking renewal of their GTA appointment must also provide a copy of an application for a fellowship or grant, which they have filed with some external funding agency.

All applications are reviewed by the graduate admissions and awards committee. The committee considers first the requests for renewal. Master's students may hold an assistantship for a maximum of two years and doctoral students for a maximum of four years. To merit renewal, the holders of assistantships are expected to demonstrate satisfactory performance of their duties as GTA and satisfactory progress toward their degrees.

The history department has four basic types of graduate courses:

HISTORY AND SECURITY COURSES

HIST 850-860: These courses are designed for the Security Studies MA program (though they are open to history students). They focus on the historical roots of contemporary security issues.

SURVEYS

HIST 903-909: Survey courses are intended to introduce students to the most important themes and issues in their respective fields. They aim to put the historical literature in broad context to help students prepare for teaching and for their comprehensive field exams.

SEMINARS

HIST 919-979, 990-992: Seminars are courses in which students are expected to study the primary source material for particular topics within a general area of study and to write a paper based on research using such sources. These courses are intended to develop graduate students' skills in the use of research tools and methods, ability to conceptualize and organize an argument, and facility in presenting research findings.

TOPICS COURSES

HIST 980-984: Topics courses are designed through reading and discussion to acquaint students with the literature in particular fields of history. They are also intended to familiarize students with major substantive areas of dispute and historical debate within a field of study. Precise topics courses vary from semester to semester, and specific topics will be listed in the class schedule.

Doctor of Philosophy

History (PHD)

History (PhD)

Admission Requirements

Graduation Requirements

Foreign Language Requirement

Doctoral students must establish reading proficiency in a foreign language. They must complete the foreign language requirement and any other research proficiencies required by their supervisory committee prior to the taking of the preliminary examination.

Proficiency may be demonstrated by any one of the following methods:

1. A student may provide evidence of passing the final course of a four-semester sequence, or the equivalent, in one foreign language at the undergraduate level with an overall grade point average of 3.0 or better and a 3.0 or higher in the final course in the sequence. In the case of students whose coursework makes it difficult to determine if they have met this standard, the Chair and the Director of Graduate Studies will, in consultation with the major advisor, determine the student's status. Or,
2. A student may provide evidence of having passed an equivalent graduate-level reading/translation examination at another accredited university. Or,
3. A student may pass a foreign language examination certifying that, with the aid of a dictionary and other printed reference materials, the student is able to understand a text relevant to the student's research well enough to use primary sources and secondary literature written in that language.

4. A student may present proof of successfully completing an immersion or other intensive language training program which provides reading proficiency. This can include, but is not limited to, academic immersion programs and government/military language training.

NOTE: Supervisory committees may specify which method the student must use to demonstrate proficiency. Further, the supervisory committee, depending on a student's area of specialization, may require that the student demonstrate a higher standard of proficiency in a foreign language, and/or additional specialized research skills, including an additional foreign language.

Preliminary Examinations: Written and Oral

Upon the completion of their course work, students take a set of written examinations, over a period of two weeks, in four fields - a comprehensive field and three special fields -- chosen in consultation with the supervisory committee. The written exams are followed by an oral examination scheduled within the same semester as the written exam period.

The Dissertation and Defense

A dissertation exhibiting mature scholarly ability will be completed under the direction of the major professor and committee in accordance with the regulations of the Graduate School. A minimum of 30 credit hours of History Ph.D. Research is required for the dissertation.

Course Requirements

Required Courses

All doctoral students must include the following courses in their programs of study:

Historiography. This requirement may be waived if a student has successfully completed a 3-hour graduate-level course in historiography at another university.

- HIST 801 - Historiography **Credits: 3-4**

900-level Seminar. Seminar courses are devoted mainly to research in primary sources and preparation of a major research paper. 3 credits.

- HIST 928 - Seminar in American History **Credits: 3**
- HIST 930 - Seminar in Modern European History **Credits: 3**
- HIST 987 - Seminar in Writing History for Publication **Credits: 3**
- HIST 990 - Seminar in Military History **Credits: 3**

Topics Courses

Eight topics courses at the 800 level or above, chosen in consultation with a student's advisory committee, based on the student's chosen chronological and thematic specialization. 24 credits.

Courses that may be taken include, but are not limited to, the following:

- HIST 905 - Nineteenth-Century Europe **Credits: 3**
- HIST 906 - Twentieth-Century Europe **Credits: 3**

- HIST 907 - Colonial/Revolutionary America Credits: 3
- HIST 908 - Nineteenth-Century America Credits: 3
- HIST 909 - Twentieth-Century America Credits: 3
- HIST 981 - Topics in Third World History Credits: 1-3
- HIST 983 - Topics in Military History Credits: 1-3
- HIST 984 - Topics in American History Credits: 1-3

Doctoral Research

30 credit hours

- HIST 999 - PhD Research in History Credits: 1-18

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Arts

History (MA)

There are three options by which students can earn the MA, which requires 30 credits: the thesis option; the report option; or the course work (non-thesis/non-report) option.

Students who choose the thesis option or the report option must include on their programs of study a prescribed number of credits in MA Research – 6 hours for those pursuing the thesis option, and 2 hours for those pursuing the report option.

Graduation Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Culminating experiences (depending on option):

Thesis option. Students must write and defend an MA thesis of approximately 75 to 100 pages. The thesis should demonstrate the candidate's capacity to organize and analyze original materials by constructing a historical argument based largely on primary materials (manuscript and archival holdings, newspapers, government publications, and other published and unpublished historical materials). The topic is chosen in consultation with the supervisory committee, which then evaluates the quality of the student's written work and their ability to orally defend the thesis's argument.

Report option. The MA report is required to meet the same requirements as the thesis but is about half the length. The supervisory committee evaluates the quality of the candidate's written work and their ability to orally defend their report's argument.

Non thesis/non report option. In the last semester of course work, the student takes a three-hour MA examination focusing on their course work, followed by an oral exam, administered by the supervisory committee.

Foreign Language

There is no general requirement of foreign language proficiency for the MA degree; however, the supervisory committee may require a student to gain proficiency in a language if this is needed for them to be able to do primary research on their chosen topic.

Course Requirements

Required Courses

All MA students must include the following courses in their programs of study:

Historiography. 3 credits. This requirement may be waived if a student has successfully completed a 3-hour graduate-level course in Historiography at another university. In such a case, a graduate topics course, chosen in conjunction with the supervisory committee, may replace Historiography.

- HIST 801 - Historiography **Credits: 3-4**

Research Seminar. 3 credits. Seminar courses are devoted mainly to research in primary sources and preparation of a major research paper.

- HIST 928 - Seminar in American History **Credits: 3**
- HIST 930 - Seminar in Modern European History **Credits: 3**
- HIST 987 - Seminar in Writing History for Publication **Credits: 3**
- HIST 990 - Seminar in Military History **Credits: 3**

Thesis Option Courses

Thesis option. 24 credits. Students must complete at least 6 topics courses at the 700 level or above and are required to enroll in at least one 800 or 900 level history course every regular semester the student is in the program unless there is only a thesis left to complete or the supervisory committee agrees to excuse this requirement.

Courses that can be taken include, but are not limited to, the following:

- HIST 899 - Master's Research in History **Credits: 1-18** (6 credit hours required)
- HIST 860 - Topics in International History **Credits: 3**
- HIST 905 - Nineteenth-Century Europe **Credits: 3**
- HIST 906 - Twentieth-Century Europe **Credits: 3**
- HIST 907 - Colonial/Revolutionary America **Credits: 3**
- HIST 908 - Nineteenth-Century America **Credits: 3**
- HIST 909 - Twentieth-Century America **Credits: 3**
- HIST 980 - Topics in European History **Credits: 1-3**
- HIST 981 - Topics in Third World History **Credits: 1-3**
- HIST 983 - Topics in Military History **Credits: 1-3**
- HIST 984 - Topics in American History **Credits: 1-3**

Report Option Courses

24 credits. Students must complete at least 7 topics courses at the 700 level or above and are required to enroll in at least one 800 or 900 level history course every regular semester the student is in the program unless there is only a report to complete or the supervisory committee agrees to excuse this requirement.

- HIST 899 - Master's Research in History Credits: 1-18 (2 credit hours required)

Coursework Only Option Courses

24 credits. Students must complete at least 8 topics courses at the 700 level or above and are required to enroll in at least one 800 or 900 level history course every regular semester the student is in the program.

Total Hours Required for Master's: 30

Mathematics

Pietro Poggi-Corradini, Head
Virginia Naibo, Director of Graduate Studies

138 Cardwell Hall
 785-532-6750
math@math.ksu.edu
<http://www.math.ksu.edu/graduate/>

Overview

The Department of Mathematics offers Ph.D. and M.S. degree programs in Mathematics, a Graduate Certificate in Applied Mathematics, a Graduate Certificate on Quantitative Techniques of Data Science, and an Accelerated B.S./M.S. in Mathematics. There are over 40 graduate students in the master's and Ph.D. programs; students and faculty come from various states in the US and countries around the world, which lends a truly international flavor to the academic environment of the Department. Financial assistance is available on a competitive basis to well-qualified Ph.D. and M.S. applicants in the form of graduate teaching assistantships and graduate research assistantships; in addition, there are graduate student fellowships and GTA stipend supplements available through the Graduate School on a competitive basis.

Research areas and facilities

The department has thriving research groups and centers in major areas of mathematics:

- Groups in algebra, analysis, applied mathematics, combinatorics, geometry, number theory, and topology.
- Center for the study of mirror symmetry and tropical geometry.
- Interdisciplinary group in network optimization.
- Center for the integration of undergraduate, graduate and postdoctoral research.
- Center devoted to mathematics education.

Kansas State University provides excellent facilities for mathematical research. The university libraries have extensive holdings in the mathematical sciences. The university provides a modern computer environment and full internet access. The Mathematics Department also has its own state-of-the-art network of workstations and PC's used for both teaching and research.

Admission

Applicants to both the masters' and doctoral programs should have completed work in mathematics at least equivalent to that required for a bachelor's degree in mathematics at Kansas State University. While there are no formal application deadlines,

international applicants residing outside the U.S. or Canada should have their application materials in by February 1 to be guaranteed consideration for the fall semester of the same year.

Accelerated

Accelerated Mathematics - Actuarial Mathematics (BS)/Mathematics (MS)

The accelerated Accelerated Mathematics - Actuarial Mathematics (BS)/Mathematics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Mathematics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process will be the same as for the traditional M.S. degree except completion of the B.S. degree is not required. The following steps are required:

- KSU graduate application form completed online before semester of enrollment. In general, applicants are only considered for fall enrollment. Application fee should be (personal check, money order, or cashier's check payable to Kansas State University Graduate School) submitted with application.
- Applicant's statement of academic objectives and preferred primary advisor(s) must be submitted with the application.
- Three letters of reference must be submitted with the application.
- Transcript(s) of all undergraduate work must be sent directly to the Department of Mathematics.

The graduate program will process the application of the student and forward it to the Graduate School, as currently occurs for students holding a B.S. who apply to the M.S. program. Should the student meet the requirements, provisional admission to the M.S. program will be granted, pending the award of the B.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- Students may apply for the accelerated B.S./M.S. program from the second semester of the sophomore year through the second semester of the junior year (when they have accumulated 75 credit hours toward the B.S. degree). Students may apply with higher credit-hour accumulation or during first semester of their senior year with special permission from the Department Head or the Director of Graduate Studies of the Mathematics department.

- Students must have completed the Mathematics Core Curriculum (MATH 220, MATH 221, MATH 222, MATH 340, MATH 511 or MATH 512, MATH 520 or MATH 633) either at K-State or by transfer credit.
- Minimum standards for admission to the accelerated program are a cumulative GPA of 3.00 and a GPA of 3.25 in the Mathematics Core courses. Retention in the program requires maintenance of a 3.00 GPA in both undergraduate and graduate coursework.

Course Requirements

Mathematics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- MATH 706 - Theory of Numbers **Credits: 3**
- MATH 715 - Applied Mathematics I **Credits: 3**
- MATH 721 - Introduction to Real Analysis **Credits: 3**
- MATH 730 - Abstract Algebra I **Credits: 3**
- MATH 770 - Introduction to Topology/Geometry I **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Mathematics - Applied Mathematics (BS)/Mathematics (MS)

The accelerated Accelerated Mathematics - Applied Mathematics (BS)/Mathematics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Mathematics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process will be the same as for the traditional M.S. degree except completion of the B.S. degree is not required. The following steps are required:

- KSU graduate application form completed online before semester of enrollment. In general, applicants are only considered for fall enrollment. Application fee should be (personal check, money order, or cashier's check payable to Kansas State University Graduate School) submitted with application.
- Applicant's statement of academic objectives and preferred primary advisor(s) must be submitted with the application.
- Three letters of reference must be submitted with the application.
- Transcript(s) of all undergraduate work must be sent directly to the Department of Mathematics.

The graduate program will process the application of the student and forward it to the Graduate School, as currently occurs for students holding a B.S. who apply to the M.S. program. Should the student meet the requirements, provisional admission to the M.S. program will be granted, pending the award of the B.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- Students may apply for the accelerated B.S./M.S. program from the second semester of the sophomore year through the second semester of the junior year (when they have accumulated 75 credit hours toward the B.S. degree). Students may apply with higher credit-hour accumulation or during first semester of their senior year with special permission from the Department Head or the Director of Graduate Studies of the Mathematics department.
- Students must have completed the Mathematics Core Curriculum (MATH 220, MATH 221, MATH 222, MATH 340, MATH 511 or MATH 512, MATH 520 or MATH 633) either at K-State or by transfer credit.
- Minimum standards for admission to the accelerated program are a cumulative GPA of 3.00 and a GPA of 3.25 in the Mathematics Core courses. Retention in the program requires maintenance of a 3.00 GPA in both undergraduate and graduate coursework.

Course Requirements

Mathematics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- MATH 706 - Theory of Numbers **Credits: 3**
- MATH 715 - Applied Mathematics I **Credits: 3**
- MATH 721 - Introduction to Real Analysis **Credits: 3**
- MATH 730 - Abstract Algebra I **Credits: 3**
- MATH 770 - Introduction to Topology/Geometry I **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Mathematics - Pure Mathematics (BS)/Mathematics (MS)

The accelerated Accelerated Mathematics - Pure Mathematics (BS)/Mathematics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Mathematics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process will be the same as for the traditional M.S. degree except completion of the B.S. degree is not required. The following steps are required:

- KSU graduate application form completed online before semester of enrollment. In general, applicants are only considered for fall enrollment. Application fee should be (personal check, money order, or cashier's check payable to Kansas State University Graduate School) submitted with application.
- Applicant's statement of academic objectives and preferred primary advisor(s) must be submitted with the application.
- Three letters of reference must be submitted with the application.
- Transcript(s) of all undergraduate work must be sent directly to the Department of Mathematics.

The graduate program will process the application of the student and forward it to the Graduate School, as currently occurs for students holding a B.S. who apply to the M.S. program. Should the student meet the requirements, provisional admission to the M.S. program will be granted, pending the award of the B.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- Students may apply for the accelerated B.S./M.S. program from the second semester of the sophomore year through the second semester of the junior year (when they have accumulated 75 credit hours toward the B.S. degree). Students may

apply with higher credit-hour accumulation or during first semester of their senior year with special permission from the Department Head or the Director of Graduate Studies of the Mathematics department.

- Students must have completed the Mathematics Core Curriculum (MATH 220, MATH 221, MATH 222, MATH 340, MATH 511 or MATH 512, MATH 520 or MATH 633) either at K-State or by transfer credit.
- Minimum standards for admission to the accelerated program are a cumulative GPA of 3.00 and a GPA of 3.25 in the Mathematics Core courses. Retention in the program requires maintenance of a 3.00 GPA in both undergraduate and graduate coursework.

Course Requirements

Mathematics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- MATH 706 - Theory of Numbers **Credits: 3**
- MATH 715 - Applied Mathematics I **Credits: 3**
- MATH 721 - Introduction to Real Analysis **Credits: 3**
- MATH 730 - Abstract Algebra I **Credits: 3**
- MATH 770 - Introduction to Topology/Geometry I **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Mathematics (PHD)

The goal of the Ph.D. Program in Mathematics is to prepare each student for a successful career in academia or industry. Candidates must demonstrate they have met criteria for both breadth and depth in their studies. A two-part qualifying exam system first examines students on their breadth, which is gained through coursework in the first year, and then examines students on depth in the area of specialty--which is achieved through further coursework and independent study. Together these exams (QE I and QE II) comprise the Graduate School's Preliminary Exam.

Admission Requirements

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

- Complete a minimum of 90 hours of graduate credit (courses numbered at the 700 level or above), with at least 60% of the credit hours in courses numbered 800 or higher.
- The above-mentioned 90 credit hours must contain a minimum of 30 credit hours of MATH 999 (PhD research), and at least 24 credit hours of coursework (exclusive of MATH 999 courses) in the Department of Mathematics.
- Eligibility to enroll in MATH 999 is restricted to students who have passed the Preliminary Exam (QE I and QE II).

Qualifying Examination QE I

QE I consists of subject exams, currently offered in four areas:

- Algebra (based on MATH 730-731)
- Analysis (based on MATH 721-723)
- Applied Math (based on Math 715-716)
- Geometry/Topology (based on MATH 770-771)

Students must pass exams in three subjects. Two are to be passed by the May following the student's first year of study; a third must be passed by the following August.

Supervisory Committee and the Program of Study

Within two years of passing QE I, the student is expected to select a major professor, to form a supervisory committee, and to file a Program of Study with the Graduate School. The Supervisory Committee will advise the student throughout the remaining period of the study, as well as administer the QE II and the final oral defense.

- The Program of Study primarily serves to notify the Graduate School of the student's supervisory committee as well as the list of the relevant coursework. It must be approved by the student's Supervisory Committee, the Department Head, and the Dean of Graduate School.
- The student must maintain at least a 3.0 GPA in the courses listed on the Program of Study. Furthermore, the student must earn a grade of A or B in three-fourths of these courses, with nothing worse than a C grade in the remaining courses.

Qualifying Exam QE II

QE II consists of written or oral exams in two subjects, a major subject and a minor subject.

The student, along with their dissertation committee, designs a syllabus based on material from 800-level courses or more advanced topics. The major subject portion of the syllabus must cover at least two semesters at this level; the minor portion at least one semester.

The student's advisor and dissertation committee must approve the format (oral, written, or combined) of the exams, which may be taken on separate occasions.

Failure of the QE II is tantamount to failing the Preliminary Exam and will be grounds for termination of financial support by the Department of Mathematics (if applicable), and failure of the second attempt will be grounds for dismissal from the Ph.D. program by the Graduate School.

Upon satisfactory completion of QE II, the doctoral student is automatically advanced to candidacy for the PhD degree.

Ph.D. Dissertation

After successful completion of the QE II, students will continue their research under the supervision of their doctoral advisors. To receive the PhD degree, the student will be required to write a PhD thesis containing non-trivial, new results of publishable quality, and successfully defend this thesis in a final oral examination administered by the Supervisory Committee. All K-State PhD students are required to submit an electronic version of their dissertation.

After the student's dissertation has been deemed acceptable by the doctoral advisor, a final oral examination will be scheduled through the Graduate School and held in accordance with Graduate School requirements.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Applied Mathematics Graduate Certificate

Contact: Dinh-Liem Nguyen
E-mail: dlnguyen@ksu.edu

Offered through the Mathematics graduate program, the Graduate Certificate in Applied Mathematics is intended to introduce students from mathematics, science, and engineering to a common foundational set of tools from modern mathematical analysis, and prepare students to use these tools for the analysis and solution of mathematical model equations arising in interdisciplinary research.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

- MATH 715 - Applied Mathematics I **Credits: 3**
- MATH 716 - Applied Mathematics II **Credits: 3**

Elective Courses

- MATH 615 - Introduction to Digital Image Processing **Credits: 3**

- MATH 635 - Dynamics, Chaos, and Fractals Credits: 3
- MATH 725 - The Mathematics of Data and Networks I Credits: 3
- MATH 726 - The Mathematics of Data and Networks II Credits: 3
- MATH 789 - Combinatorial Analysis Credits: 3
- MATH 801 - Numerical Solution of Differential Equations I Credits: 3
- MATH 802 - Numerical Solution of Differential Equations II Credits: 3
- IMSE 881 - Linear Programming Credits: 3
- IMSE 882 - Network Flows and Graph Theory Credits: 3
- IMSE 884 - Integer Programming and Combinatorial Optimization Credits: 3
- IMSE 982 - Nonlinear Programming Credits: 3
- ECE 840 - Computer Engineering Methods for Analysis, Simulation, and Design Credits: 3
- ECE 861 - Applied Probability Theory & Random Processes Credits: 3
- ECE 963 - Detection & Estimation Theory Credits: 3
- ECE 965 - Information Theory Credits: 3
- CE 803 - Numerical and Analytic Techniques for Engineers Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 710 - Sample Survey Methods Credits: 3
- STAT 713 - Applied Linear Statistical Models Credits: 3
- STAT 716 - Nonparametric Statistics Credits: 3
- STAT 717 - Categorical Data Analysis Credits: 3
- STAT 720 - Design of Experiments Credits: 3
- STAT 722 - Experimental Design for Product Development and Quality Improvement Credits: 3
- STAT 730 - Multivariate Statistical Methods Credits: 3
- STAT 736 - Bioassay Credits: 2
- STAT 745 - Statistical Graphics Credits: 3
- ME 820 - Intermediate Topics in Thermal and Fluid Mechanics Credits: 0-18
- CIS 625 - Concurrent Software Systems Credits: 3
- CIS 770 - Formal Language Theory Credits: 3
- CIS 775 - Analysis of Algorithms Credits: 3

Total Hours Required for Graduate Certificate: 12

Quantitative Techniques of Data Science Graduate Certificate

Contact: Nathan Albin
Email: albin@ksu.edu

Completion of this certificate will provide training in the theory and practice of data analytics, including both technical skills and social and ethical considerations.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

MATH 222, MATH 551, STAT 250, or equivalents.

Course Requirements

Required Courses

Mathematical Background

- MATH 620 - Convex Optimization for Data Science **Credits: 3**

Statistics Background

- STAT 705 - Regression and Analysis of Variance **Credits: 3**

OR

- STAT 713 - Applied Linear Statistical Models **Credits: 3**

Data Science in Context (*Choose one of the following*)

- CRIM 550 - Cybercrime, Security, and Society **Credits: 3**
- GWSS 435 - Race/Sex/Science **Credits: 3**
- HIST 320 - History of Technology **Credits: 3**
- HIST 519 - Science and Technology in the United States **Credits: 3**
- PHILO 386 - Philosophy of Computer Science and Software Engineering **Credits: 3**

Elective Courses

Advanced Techniques for Data Science (**Select two classes from the following**)

- CC 535 - Applied Data Science **Credits: 3**
- CIS 531 - Introduction to Programming Techniques for Data Science and Analytics **Credits: 3**
- IMSE 785 - Big Data Analytics **Credits: 3**
- MATH 725 - The Mathematics of Data and Networks I **Credits: 3**
- MATH 726 - The Mathematics of Data and Networks II **Credits: 3**
- STAT 745 - Statistical Graphics **Credits: 3**
- STAT 760 - Optimization for Data Science **Credits: 3**
- STAT 761 - Discrete Optimization and Scalability for Data Science **Credits: 3**
- STAT 764 - Applied Spatio-Temporal Statistics **Credits: 3**
- STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics **Credits: 3**
- STAT 768 - Applied Bayesian Modeling and Prediction **Credits: 3**

Topics courses that address Data Science, with the approval of the Certificate Coordinator.

Students are strongly encouraged to have a class that addresses programming if they don't already have a strong background in that area.

Total Hours Required for Graduate Certificate: 15

Master of Science

Mathematics (MS)

The goal of the master's program in mathematics at Kansas State University is to expose each student to the foundations of advanced mathematics. There are three distinct master's degree options recognized by both the Mathematics Department and the Graduate School: master's thesis; master's report; and the qualifying exam option. In all cases, the graduate student must include at least 30 credit hours of mathematics at the 700 level or above on the program of study, which is composed in consultation with the student's supervisory committee.

Supervisory Committee and the Program of Study

By the end of the second semester of graduate study, the student is expected to choose a major professor and a Supervisory Committee and file a Program of Study with the Graduate School. This Supervisory Committee will advise the student throughout the remaining period of study, as well as administer the Final Examination.

The Program of Study must be approved by the student's Supervisory Committee, the Department Head, and the Dean of the Graduate School. The student must earn a minimum of 30 credit hours of graduate credit (courses numbered at the 700 level or above). The student must maintain at least a 3.0 GPA in the courses listed on the Program of Study. Furthermore, the student must earn a grade of A or B in three-fourths of these courses, with nothing worse than a C grade in the remaining courses.

Course Requirements

Required Courses

9 credit hours. Grade of B or better in these courses

- MATH 715 - Applied Mathematics I **Credits: 3**
- MATH 716 - Applied Mathematics II **Credits: 3**
- MATH 721 - Introduction to Real Analysis **Credits: 3**
- MATH 723 - Complex Functions **Credits: 3**
- MATH 730 - Abstract Algebra I **Credits: 3**
- MATH 731 - Abstract Algebra II **Credits: 3**
- MATH 770 - Introduction to Topology/Geometry I **Credits: 3**
- MATH 771 - Introduction to Topology/ Geometry II **Credits: 3**

Thesis Option Courses

Meet all course work requirements (30-32 credit hours) to include nine credit hours of core QE I courses (715, 716, 721, 723, 730, 731, 770, 771 with a grade of B or better in these courses) and write a thesis involving original mathematical research. The thesis must be defended before the Department of Mathematics faculty.

- MATH 899 - Thesis Topics **Credits: 1-18** (6-8 credit hours)

Report Option Courses

Meet all course work requirements (30-32 credit hours) to include nine credit hours of core QE I courses (715, 716, 721, 723, 730, 731, 770, 771 with a grade of B or better in these courses) and write a report on existing mathematical results. The report must be defended before the Department of Mathematics faculty.

- MATH 898 - Master's Research **Credits: 1-18** (2 credit hours)

Qualifying Exam Option

Pass two QE I subject exams and all course work requirements (30-32 credit hours) to include at least nine credit hours of core QE I courses (715, 716, 721, 723, 730, 731, 770, 771 with a grade of B or better in these courses).

Total Hours Required for Master's: 30-32

Media and Communication

Graduate Certificate

Dialogue, Deliberation, and Public Engagement Graduate Certificate

Designed to be a transformative experience for graduate students and professionals, this program covers the practice and theory of leading groups through collaborative decision-making. Through a series of four courses, students will learn:

- approaches to participatory planning and collaborative decision-making that are supported by sound scholarship
- communication and leadership skills for designing and leading productive meetings
- dialogic practices for developing and maintaining constructive working relationships and managing conflict
- proven frameworks selecting or designing engagement processes for organizations, stakeholders, or whole communities
- a wide range of tools and techniques for engaging small and large groups to address conflicts, explore alternatives and inform policy
- principles and practices that move groups toward sustainable action that changes lives

Courses are presented in a hybrid format, with some offered online and others face-to-face. Students will interact regularly with each other and leaders in the field.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Acceptance into the program is contingent on satisfactory standing with the graduate school. Approval must be granted by the student's graduate committee and the DDPE director.

Course Requirements

Required Courses

6 credit hours

- COMM 790 - Deliberation & Dialogue Theory **Credits: 3**
AND
- COMM 816 - Small Group Communication **Credits: 3**
OR
- COMM 837 - Practicum in Communication and Conflict **Credits: 3-6**

Elective Courses

6 credit hours

- COMM 816 - Small Group Communication **Credits: 3**
- COMM 831 - Deliberation & Dialogue Process Models **Credits: 3**
- COMM 835 - Leadership Communication **Credits: 3**
- COMM 837 - Practicum in Communication and Conflict **Credits: 3-6**

- COMM 840 - Intercultural Communication **Credits: 3**
- COMM 845 - Approaches to Public/Community Engagement **Credits: 3**
- COMM 916 - Communication Theories and Engagement **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Digital Media for Educators Graduate Certificate

The Interdisciplinary Graduate Certificate in Digital Media for Educators, open to all graduate students on campus and online and working professionals, is a fully online program designed to help students build advanced knowledge, confidence, and skills to effectively use a range of educational technology, digital media, and social media as well as earn an industry-recognized certification in social media, digital marketing, and other subjects.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

All applicants are required to meet the general university admission requirements.

Graduation Requirements

Completion of certificate courses with a cumulative GPA of 3.0

Course Requirements

Required Courses

- EDCI 864 - Social/Cultural Issues in Educational Technology **Credits: 3**
- EDCI 866 - Educational Technology Change Management **Credits: 3**
- EDCI 886 - Seminar in Curriculum and Instruction **Credits: 1-18**
- MC 820 - Digital Media Audiences and Analytics **Credits: 3**

Elective Courses

Choose one:

- COMM 843 - Communication and Technology **Credits: 3**
- MC 782 - Strategic Communications Management **Credits: 3**
- MC 840 - Social Media Data Visualization **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Strategic Health Communication Graduate Certificate

The interdisciplinary online certificate in strategic health communication advances students' knowledge and communication skills to effectively communicate about a wide array of public health issues. The program provides the necessary theoretical and methodological grounding for design of health communication strategies and messaging that can be disseminated through social media and other communication strategies. Students will be equipped with the necessary skills to gather and analyze data, and to develop, disseminate and evaluate evidence-based health communication campaigns.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Working professionals with a bachelor's degree; seniors and graduate status from discipline with interest in a career in public health, health and environmental reporting, hospital public relations, administration.

Graduation Requirements

15 credit hours, 3.0 GPA overall

Course Requirements

Foundational Course

3 credit hours. Choose one:

- MC 780 - Research Methods in Mass Communications **Credits: 3**
- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**

Required Courses

9 credit hours

- MC 712 - Environmental Communications **Credits: 3**
- MC 750 - Strategic Health Communication **Credits: 3**
- MPH 754 - Introduction to Epidemiology **Credits: 3**

Elective Courses

3 credit hours. Choose one:

- DMP 815 - Multidisciplinary Thought and Presentation **Credits: 3**
- DMP 844 - Global Health Issues **Credits: 3**
- FNDH 700 - Global Health and Nutrition **Credits: 3**
- HDFS 725 - Community Mental and Relationship Health Interventions **Credits: 3**
- KIN 818 - Social and Behavioral Bases of Public Health **Credits: 3**

Total Credit Hours Required for Graduate Certificate: 15

Master of Arts

Communication Studies (MA)

The graduate program in communication studies within the Media and Communication department, offers students a broad-based education in the theory and criticism of human communication. The objective of the program is to provide students with a program of instruction that exposes them to diverse perspectives within the field of communication studies in preparation for careers in higher education, business, law, ministry, government, and community service.

The communication studies program is housed in Nichols Hall, one of the architectural showpieces of the K-State campus. Facilities include semi-private office accommodations for graduate teaching assistants, a departmental library, seminar room, and practice facilities for debate and forensics activities. The K-State campus is ideally situated for students interested in the study of political communication because of the proximity of the Eisenhower and Truman presidential libraries.

The graduate program in communication studies has been recognized as one of the top graduate programs in communication studies in the midwest region. The graduate faculty is committed to providing every student with individual attention in the planning and conduct of his or her program of study. Classes are small, allowing faculty and students to work closely together on projects of mutual interest. Graduate students may also work with K-State's nationally recognized debate and forensics programs.

Course Requirements

Students become eligible for the master of arts in communication studies upon recommendation of the graduate faculty and completion of the following requirements:

Degree Options

Students may elect either a thesis or nonthesis (report) program of study. A master's thesis identifies an original research problem, implements an appropriate methodology and reports and interprets its findings. Completion of a thesis project demonstrates the student's ability to carry out sustained, independent research that makes an original contribution to the discipline. A master's report is an academic essay that reviews and analyzes research literature within the discipline. Completion of a report project demonstrates the student's ability to interpret and synthesize scholarly literature in a given subject area.

Completion of the coursework only option provides students with additional classroom exposure to the discipline and may be appropriate for students who do not intend to pursue doctoral study in the discipline. *A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.*

Both the master's thesis and research report options require prospectus approval by the graduate faculty and adherence to Graduate School and departmental guidelines.

Required Courses

- COMM 710 - Introduction to Communication Research Methods **Credits: 3**
- COMM 720 - Perspectives on Communication **Credits: 3**
- COMM 730 - Classical Rhetorical Theory **Credits: 3**
and one of the following:
- COMM 733 - Rhetorical Criticism **Credits: 3**

- COMM 821 - Experimental Research in Communication Studies **Credits: 3**
OR
- COMM 822 - Field Research in Communication Studies **Credits: 3**

Elective Courses

An additional 18 credit hours in communication studies courses numbered at the 600 level or above, including six credit hours of COMM 899 (for students electing the thesis option); or an additional 18 credit hours, including 2 credit hours of COMM 899 (for students electing the nonthesis (report) option).

Submission of an acceptable thesis or report.

OR

Successful completion of a comprehensive (written and oral) examination over coursework for those electing the coursework only degree option.

In consultation with his or her advisor, a student may develop a minor emphasis of up to 6 credit hours at the 500 level or above in academic areas outside the communication studies program.

Total Hours Required for Master's: 30

Master of Science

Mass Communications (MS)

Every industry has one thing in common. They all need experts in communication to help them deliver their message. The A.Q. Miller School's Master's in Mass Communications provides the flexibility to tailor coursework to fit students' individual career goals. Topics include strategic communications, health and science communication, community media or digital news.

Working with nationally recognized faculty from across the university, students will tap into the latest ideas, methods, and topics. Faculty in the A.Q. Miller School regularly conduct communication research and engage in community development projects across Kansas and around the world. Graduates have gone on to careers at major media outlets, as well as leadership positions at national public relations and advertising agencies.

Admission Requirements

Admission to the master's degree program requires an undergraduate degree from a four-year college or university, with basic undergraduate course work in journalism and mass communications. Provisional admission may be granted to applicants entering the degree program with no previous course work in mass communications, with the requirement to take basic undergraduate courses along with the graduate course work. Also required are satisfactory scores on the GRE (an average in the 50th percentile) and an undergraduate GPA of 3.0 or above on the final 60 hours of course work. Official transcripts of undergraduate degree work and three letters of reference from instructors and/or professional colleagues must be sent directly to the School.

Consideration for admission is given to international applicants who have a TOEFL score of 600 or above (or 250 or above on the computer version), in addition to a satisfactory score on the GRE. Application forms will not be sent to international students until notice of GRE and TOEFL scores is received. Also required is certification that applicants have adequate financial resources to complete the degree.

Graduation Requirements

Course Requirements

30 graduate semester hours, distributed as follows:

- Two 700-level electives in MC
- Thesis or report
- Graduate electives in the area of specialization to complete 30 semester hours
 - courses in MC must be 600-level or above; courses outside MC can be 500-level or above to count for graduate credit.

Required Courses

- MC 765 - Communication Theory **Credits: 3**
- MC 780 - Research Methods in Mass Communications **Credits: 3**
- MC 850 - Applied Research in Mass Media **Credits: 3**

Total Hours Required for Master's: 30

Modern Languages

Rebecca Bender, Interim Head

207 Eisenhower Hall
785-532-6760
Fax: 785-532-7004
modlang@k-state.edu
<http://www.ksu.edu/mlangs>

Admission

Incoming students should have undergraduate degrees in the particular language of study or in teaching, although we do accept on a provisional basis those students who have considerable expertise in the language and culture in other ways, e.g., native speakers or U. S. citizens with extensive travel, living, and educational experience abroad.

All applications are reviewed by the department head and the graduate faculty within the department. The priority deadline for consideration for funding (Graduate Teaching Assistantship and/or scholarships) is December 15 (fall admission) for all candidates. Depending on the language you wish to study, assistantships may or may not be available after this date.

Applications need to include the following:

1. Personal statement explaining your aims and interests
2. Application
3. A recording or video responding to the following questions: (1) what is your interest in the program? (please answer in English) and (2) please describe your professional goals long term. (please answer in the target language of study)
4. Three letters of recommendation from persons qualified to speak informatively of the applicant's academic performance and his or her potential for advanced studies in the field.
5. Copies of the official transcripts from each college or university the applicant has attended. Only official copies are accepted by the Graduate School.

6. Application fee (required by the Graduate School)
7. Completed application to the Graduate School
8. For international students, an official TOEFL, or IELTS score report and Kansas State University's financial affidavit

Financial support

A limited number of graduate teaching assistantships (GTA) are available. These positions offer the opportunity of teaching university-level courses under close pedagogical supervision. Full-time teaching assistants will teach three courses per year. All full-time GTAs receive a 100% tuition waiver. GTAs must be enrolled in a minimum of 6 hours of classwork in the Department of Modern Languages per semester to qualify. Except in unusual circumstances, GTAs are expected to enroll in 9 hours. Assistantships are normally renewable for a period of two years, assuming satisfactory teaching performance and progress toward the degree. The department also offers scholarships; awarded on a competitive basis, these may be held in addition to an assistantship.

Graduate Certificate

Teaching English as a Foreign Language Graduate Certificate

The Graduate Certificate Program in Teaching English as a Foreign Language is intended for aspiring teachers of English for non-native speakers, as well as for practicing teachers who would like to enhance their skills and credentials. Students will be better prepared to teach English in a wide range of contexts, both abroad and domestically, or to pursue a graduate degree in TEFL or another field within applied linguistics. A total of 18 credit hours are required to complete the certificate program, 15 hours (5 courses) of required, core courses, and 3 hours (1 course) of an approved elective course.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Applicants must hold a BA in a related field (e.g., language, education, etc.) or must be pursuing an MA in a related field. Applicants with a different academic background may, at most, be permitted probationary admission, with stipulations for coursework and/or expectations for performance during the first semester in the program.

Course Requirements

Required Courses

12 credit hours

- MLANG 600 - Principles of Linguistics: Language Structure and Language Use **Credits: 3**
- MLANG 710 - Foreign Language Pedagogy **Credits: 3**
- MLANG 770 - Theories of 2nd Language Acquisition **Credits: 3**
- MLANG 803 - Practicum in Adult TESL/TEFL: Written and Oral Communication **Credits: 3**

Elective Courses

Select one 3 credit hour course from, the following list. Alternative courses may be allowed after consultation and approval by the department head.

- ANTH 525 - Language and Culture **Credits: 3**
- ANTH 528 - Topics in Linguistic Anthropology **Credits: 1-4**
- ANTH 720 - Field Methods in Linguistics **Credits: 3**
- COMM 840 - Intercultural Communication **Credits: 3**
- EDCI 720 - ESL/Dual Language Methods **Credits: 3**
- EDCI 731 - ESL/Dual Language Linguistics **Credits: 3**
- EDCI 742 - ESL/Dual Language Assessment **Credits: 3**
- ENGL 700 - Old English **Credits: 3**
- ENGL 757 - Studies in Language and Linguistics **Credits: 3**
- ENGL 820 - Seminar in Language **Credits: 3**
- MLANG 804 - Seminar/Topics in TESL/TEFL **Credits: 3**
- PHILO 625 - The Philosophy of Language **Credits: 3**
- ENGL 790 - History of the English Language **Credits: 3**
- MLANG 779 - Seminar in Modern Languages **Credits: 3**

Total Credits Required for Graduate Certificate: 15

Master of Arts

Modern Languages (MA)

The Department of Modern Languages offers a 30-hour M.A. program with subspecialties in French, German, Spanish, or Teaching English as a Foreign Language. Courses are offered in language, second language acquisition, pedagogy, (applied) linguistics; literature, cultural studies, film, literary theory; translation and interpretation. Graduates are prepared to pursue study at the doctoral level or to seek a career where advanced proficiency in a second language is necessary (e.g. teaching, governmental agency work, international business, translation and interpretation, etc.).

Course Requirements

In consultation with the student's advisory committee, each student will complete the following program of study.

Required Courses

A minimum of 3 hours selected from courses below. Additional courses from this list may be taken as subspecialty electives.

- MLANG 600 - Principles of Linguistics: Language Structure and Language Use **Credits: 3**
- MLANG 710 - Foreign Language Pedagogy **Credits: 3**
- MLANG 720 - Introduction to Literary Theory and Research Methodology **Credits: 3**
- MLANG 770 - Theories of 2nd Language Acquisition **Credits: 3**

Elective Courses

Students will complete 21 hours of course work at the 600-level or above in their subspecialty (French, German, Spanish, or Teaching English as a Foreign Language), in consultation with committee. Students may substitute Modern Languages topics

courses at the 700 and 800 level in consultation with their major professor as appropriate. Students may petition to substitute some hours with courses outside of the department of Modern Languages, with the approval of the committee.

Thesis Option Courses

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

6 hours related to the thesis.

Report Option Courses

2 hours related to the report, 4 hours of additional electives.

Coursework Only Option Courses

6 hours of additional electives.

Total Hours Required for Master's: 30

Teaching English as a Foreign Language (MA)

The Modern Languages department offers a Master of Arts degree in Modern Languages with a specialization in Teaching English as a Foreign Language. This track provides a range of interdisciplinary courses. Concentrations in this track are in the study of second language acquisition, the teaching of English as a foreign language (TEFL), and in English-language culture and literature.

The MA TEFL will equip graduates to become leaders in classroom innovation in the field of English language teaching. As skilled English teachers they will be highly employable in the increasingly wide range of contexts emerging globally, as demand for competence in English continues to grow. The MA in TEFL is intended for aspiring teachers of English or for practicing teachers who wish to upgrade their professional standing. It is most suitable for teachers whose interests lie mainly in classroom practice.

Entrance requirements are those of the Graduate School. With approval of the graduate committee, the student would choose:

- 30 hours of course work
- 28 hours of course work plus a master's report
- 24 hours of course work plus a master's thesis

In addition, the M.A. candidate would take a written comprehensive exam, followed several days later by a one-hour oral exam.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

I. Pedagogy and Methodology (9 hours)

- MLANG 710 - Foreign Language Pedagogy Credits: 3

- MLANG 770 - Theories of 2nd Language Acquisition **Credits: 3**
- MLANG 600 - Principles of Linguistics: Language Structure and Language Use **Credits: 3**

II. Teaching English as a Foreign Language (6 hours)

- MLANG 803 - Practicum in Adult TESL/TEFL: Written and Oral Communication **Credits: 3**
- MLANG 804 - Seminar/Topics in TESL/TEFL **Credits: 3**

III. Language and Culture (6-12 hours)

May be selected from existing courses in English or Modern Languages, depending on the needs of the individual participant, or courses in related areas such as anthropology, education, or speech.

IV. Electives (3-6 hours, with the approval of the program committee)

- ENGL 759 - Studies in Technical Communication **Credits: 3**
- ENGL 799 - Problems in English **Credits: 1-18**
- EDCEP 715 - Principles of Assessment **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCEP 829 - Learning Principles **Credits: 3**
- EDCEP 775 - Readings in Counseling and Educational Psychology **Credits: 1-3**
- EDCEP 795 - Problems in Counseling and Educational Psychology **Credits: 1-18**
- EDCI 720 - ESL/Dual Language Methods **Credits: 3**
- EDCI 731 - ESL/Dual Language Linguistics **Credits: 3**
- EDCI 742 - ESL/Dual Language Assessment **Credits: 3**
- COMM 840 - Intercultural Communication **Credits: 3**
- ANTH 528 - Topics in Linguistic Anthropology **Credits: 1-4**
- EDACE 786 - Topics in Adult Learning and Leadership **Credits: 1-3 ***

*Grant Writing

V. Master's Thesis (6 hours), or Master's Report (2 hours)

Total Hours Required for Master's: 30

Music, Theatre, and Dance

Bryan Pinkall, Director

Frederick Burrack, Director of Graduate Studies (Music)

Sally Bailey, Director of Graduate Studies (Theatre)

109 McCain Auditorium

785-532-3429

Fax: 785-532-6899

www.k-state.edu/music/graduate/

or

www.k-state.edu/theatre/academics/graduate.html

Music Program

Kansas State University's graduate program in music is designed to furnish specialized professional training supported by competence in those fundamental areas needed by all musicians. Emphasis is placed on the personal growth and development of the student toward individual goals. The program is large enough to provide ample variety, yet small enough to allow personal attention to each student. While students are given considerable responsibility in all phases of the educational program, faculty guidance is available constantly.

The Music program offers the master of music with a specialization in the following areas: music education, music history/literature, performance with pedagogy emphasis, and composition.

Areas of Emphasis

Bands: Goins, Tracz, Wimmer, Payne

Brass instruments: Fassler-Kerstetter, Parker, Maxwell, Kilgore, Hinman

Chamber music: All faculty as approved by the Graduate College

Choral groups: Oppenheim, Yu-Oppenheim

Conducting: Dirks, Oppenheim, Tracz, Wimmer, Yu-Oppenheim

Jazz studies: Cochran, Gartner, Goins, Payne

Keyboard instruments: Dobrzanski, Pickering

Music education: Burrack, Gurgel, Oppenheim, Payne, Tracz, Ward, Wimmer, Yu-Oppenheim

Music history and musicology: Cochran, Hunt, Parker, Goins

Opera and musical theatre: Rosine, Pittman

Orchestras: Dirks

Percussion instruments: Gartner

String instruments: Dirks, Jansen

Theory: Fassler-Kerstetter, Morris, Pickering, Weston

Voice: Pinkall, Pittman, Rosine, Thompson

Woodwind instruments: Kerstetter, Morris, White, Wytko

Composition: Morris, Weston

Theatre Program

The graduate program in theater offers a master of arts degree in theater with concentration in drama therapy. Students take courses in drama therapy, play writing, and psychology/family studies/human development/counseling to fulfill the requirements for registry with the North American Drama Therapy Association. The degree is approved and accredited by the North American Drama Therapy Association.

Music, Theatre and Dance Facilities

The School of Music, Theatre and Dance is housed in McCain Auditorium, Nichols Hall, and the Purple Masque Theatre (West Stadium). Ample classrooms, rehearsal halls, practice studios, and offices are supplemented by a small hall for chamber music, a 1,800-seat auditorium, a 240-seat thrust theatre, and a 100 seat thrust theatre. The Piano Lab provides 15 midi work-stations with a state-of-the-art teaching/presentation station. Midi Workstations also exist in Nichols Hall. The department is an official Steinway School and owns four concert grand pianos, several studio grands, and a number of well-maintained practice uprights. Organs include a concert Austin (40 rks), a Bosch tracker (9 rks), and a J.W. Walker Continuo organ. An electronic studio centers around digital and analog synthesizers with ample supporting equipment. For the performance of early music, the department owns one harpsichord, a chest of matched viols, and assorted wind instruments.

The music division of Hale Library contains a growing reference and research collection fully adequate to master's level work, as well as an extensive collection of recordings. The Special Collections Division holds a number of rare items, from 16th century

prints to one of the two largest collections of the manuscripts of Gail Kubik, world-renowned 20th-century composer. The Graduate Music Seminar-Study Room offers a place in the Music Program in which materials may be placed on reserve for easy, convenient availability to graduate students.

Music Careers

In addition to enriching the quality of one's life, enhancing the understanding of other epochs and cultures, and providing outlets for self-expression, graduate study in music prepares students for a variety of professions. K-State's music alumni perform professionally with symphony orchestras, military bands, chamber music ensembles, opera and musical theatre companies, choral ensembles, jazz, rock, country, and bluegrass groups, in recording studios, and as soloists and accompanists. Others are active as composers of concert, commercial, liturgical, and/or educational music. K-State graduates also hold prominent positions in the fields of music education (pre-school through collegiate levels), private teaching, church music, music therapy, librarianship, and in the music industry. In addition, several K-State music graduates have used their arts degrees as preparation for professional schools such as law and medicine.

Music Performance Opportunities

A full range of performing organizations and small ensembles provides the graduate student with a variety of performance opportunities. These include Concert Choir, Collegiate Chorale, University Treble Chorus, University Choir, Grand Chorus, In-A-Chord, Collegium Musicum, Madrigal & Motet Ensemble, Opera Workshop, Wind Ensemble, Wind Symphony, Concert Band, University Band, Concert Jazz Ensemble, Jazz Lab A, Jazz Combos, Brass Ensemble, Woodwind Ensemble, Percussion Ensembles, Marching Band, Additional Athletic Bands, Symphony Orchestra, Theatre Orchestra, Opera Theatre, and multiple small ensembles. Moreover, the Collegium Musicum performs early music on authentic instruments, and chamber music flourishes in a number of small groups of various instrumentation.

Although not directly associated with the School of Music Theatre, and Dance, the McCain Auditorium Performance Series brings to the campus large musical attractions, world-famous soloists, and chamber music, as well as dance troupes and theatre companies. Faculty recitals expand the opportunities to hear performances of professional caliber.

Theatre Season and Outreach Programs

The Theatre program offers 4 main stage shows each year: one musical, produced in conjunction with the music and dance programs, and three straight plays, usually directed by faculty. The Purple Masque season presents four non-musical plays per year. These productions are often directed by graduate students in theatre as part of their creative projects for their degree. Drama therapy graduate students are involved in the Barrier-Free Theatre, a company for actors with and without disabilities, among other outreach opportunities in the community.

Admission to the Graduate Program in Music

Admission to the Graduate School of Kansas State University is handled through individual departments. Applicants interested in the Graduate Program in Music should send inquiries to Frederick Burrack, Director of Graduate Studies, School of Music, Theatre and Dance, Graduate Music Studies, 109 McCain Auditorium, Kansas State University, Manhattan, KS 66506-4702. Graduate Teaching Assistantships are selected in January. (International Student should note the deadlines for admission as seen on the Graduate website).

Application is made through <http://www.k-state.edu/grad/admissions/application-process/> requiring the following:

1. The application fee.
2. One copy of an official transcript from each undergraduate and/or graduate institution previously attended.
3. Three letters of recommendations.
4. A statement of applicant's personal and professional goals.

5. Requested but not required: YouTube link demonstrating performance skills (if specialization performance, pedagogy; conducting/teaching skills if specialization is music education), sample original scores (if specialization is composition), or an example of scholarly work (if specialization is history/literature). On-campus auditions are usually required.
6. International students are also required to send TOEFL scores and Affidavit of Financial Support.

Admission to the Graduate Program in Theatre with concentration in Drama Therapy

Application is made through <http://www.k-state.edu/grad/admissions/application-process/> requiring the following:

1. A completed application form (completed online - <http://www.k-state.edu/grad/application>)
2. The application fee.
3. One copy of an official transcript each undergraduate and/or graduate institution previously attended.
4. Three letters of recommendations of professors or professional employers who can speak to your potential to succeed at the graduate academic level.
5. A statement of the applicant's personal and professional goals.
6. International students are also required to send TOEFL scores and Affidavit of Financial Support.

Students interested in drama therapy need to arrange an interview with Michelle Yadon, Director of the Drama Therapy Program at sdbailey@k-state.edu.

Entrance requirements

Admission with full standing

To be considered for admission with full standing, the applicant must have:

1. A bachelor's degree from an approved institution.
2. Adequate preparation in the field of music: normally a B.M., B.M.E., B.S. in music education, B.A. in music, or the equivalent.
OR
Adequate preparation in the field of drama therapy: normally a B.A., B.S. or B.F.A. in theatre or the equivalent.
Undergraduate electives in psychology are not required, but are helpful.
3. An undergraduate average of B or better.

If all of the foregoing requirements are not met, probationary admission may be considered, provided there is other evidence that the applicant has the ability to do satisfactory graduate work. Such evidence might include a post-graduate record at another institution or successful professional work.

Probationary admission

Students may be admitted provisionally if there is uncertainty in evaluating transcripts.

Full standing for probationary or provisional students is attained automatically upon completion of at least 9 hours of work for graduate credit with a grade of B or better. Students admitted on probation may be denied continued enrollment if they receive a grade less than B.

Special students

An application for admission to the Graduate School in the School of Music, Theatre and Dance ordinarily implies the student's intention to work toward an advanced degree. Students who do not plan to work toward an advanced degree, however, may be admitted as special students. Those who later wish to enter the degree program must undergo a full review. No more than 9 semester hours earned as a special student may be transferred into a regular degree program.

Admission to the Graduate School in the Department of Music does not necessarily imply admission to a particular program within the department. For special requirements, see the individual areas of emphasis.

Residence requirements

Candidates in music will require 4 semesters to complete the degree. The summer program can be completed in 3 summers. Summer study in music education requires on-campus attendance during residency week. Candidates who serve as graduate assistants or hold positions outside of their academic responsibilities must be completed in four semesters.

Candidates in drama therapy will need at least 4 semesters and one summer to complete all of the academic requirements of the degree and of the North American Drama Therapy Association.

Courses taken more than six years before the completion of the degree generally cannot be credited toward the degree.

Transfer credit

Graduate credit with a grade of B, or better, may be transferred from other accredited institutions. Transfer of more than 6 hours requires special action; in no case may more than 10 hours be transferred.

Assistantships and financial aid

A limited number of graduate assistantships in the Music program are available during the regular academic session, but they are not available in the summer. Assistantships are given in specific areas, according to departmental needs. Teaching assistants are usually needed in aural skills, music theory, music education, accompanying, band, choir, orchestra, collegium musicum, music appreciation, piano class, and voice (class and/or studio teaching). Other assistantships involve work in the Music Library, the instrument room, and various aspects of administration. All assistantships include monitoring the technology lab and taking attendance at recitals.

The Theatre program offers a limited number of Graduate Teaching Assistantships (GTA) in theatre. Students may also apply to other departments and offices on campus for GRAs, GAs, and GTAs.

Graduate assistantships require up to 16-20 hours a week, which is regarded as five-tenths of full time. Such an appointment entitles the student to a full waiver of tuition and out-of-state fees, as well as eligibility to apply for university health insurance. Graduate assistants who are appointed to a .25 tenths position work 8-10 hours per week. All applicants for full-time study in the Master of Music program are automatically considered for assistantships; no additional application form is needed. Drama therapy students interested in an assistantship should submit their application by February 1 for the coming academic year to meet the deadline to apply for assistantships offered in other campus offices.

Assistantships are awarded with the expectation that the student will spend two years in residence and that satisfactory performance of duties and satisfactory academic work will bring renewal of the assistantship. Assistantships are not available for more than two years. Graduate assistants in the Music Program are expected to participate in a large ensemble each semester.

For eligible students, work-study funds are available for a variety of jobs on campus. There are work-study positions in the costume shop and scene shop for individuals who have the appropriate skills. Inquiries regarding eligibility for work-study should be addressed to the Office of Aids and Awards, Fairchild Hall, Kansas State University, Manhattan, KS 66506.

All non-native English-speaking applicants, including those with a bachelor's degree from a U.S. college or university, must score at least 550 on the TOEFL and at least 50 on the Speak Test before being appointed to a graduate teaching assistantship in the Kansas State University Music Program.

Course loads

No graduate student in music shall take more than 16 hours of credit during fall or spring semesters. Most graduate students in theatre take a minimum of 11 credit hours during fall and spring semesters and are typically involved in drama therapy internships and/or production work throughout the year. Courses taken during the summer are not covered under most assistantships. Graduate assistantships will only cover the tuition for 10 credit hours per semester. Any credit hours above that amount are paid for at the in-state tuition cost. Graduate assistants may not take less than six hours in any semester.

Registration

Registration procedures are outlined each semester in the Schedule of Classes and Enrollment Procedures. First-term graduate students may be required to arrive on campus (for orientation and testing) one week before classes begin. The needed information will be communicated to each student in ample time by the Director of Graduate Studies. All music graduate students will register through the office of the Director of Graduate Studies in Music. All theatre graduate students will register through the office of the Director of Graduate Studies in Theatre.

Music Placement tests

Each entering music graduate student will take placement tests. The written tests will consist of two sections, theory and music history. The tests will include components equivalent to those of the KSU undergraduate program.

The results of these tests will be used in planning a suitable program of study for each individual. If remedial work is indicated, it may be accomplished through coursework or by doing independent study before re-examination.

Supervisory committee

During the **music student's** first semester, the director of graduate studies in music shall, in consultation with the student, appoint a major professor for each student. No later than the second semester, the major professor will organize a Supervisory Committee consisting of himself/herself as chair, the Director of Graduate Studies in Music, and at least one other faculty member.

By the end of the first semester **all theatre** students should have identified a major professor in consultation with the director of graduate studies in theatre. No later than end of the second semester, a Supervisory Committee of three faculty members, including the major professor, should be identified and a program of study filed with the Graduate School.

The duties of the Major Professor will be to (1) meet no later than the student's second semester to review the student's work, (2) meet with the student no later than the second semester in order to formulate and approve the student's academic program, (3) offer counsel and advice to the student throughout his/her academic career and to approve such changes in his/her program as are agreed upon, (4) advise the student in the selection of a topic for the master's thesis, report, or creative project or the program for master's recital, and to approve the final choice, (5) The Supervisory Committee will act as the final reading committee of the master's thesis, or report, or as the judging committee for the student's final master's recital (music) or creative project (theatre), (6) serve as the examining committee for the student's comprehensive examination.

The initial organization of the Supervisory Committee and the scheduling of its first meeting shall be the responsibility of the major professor. Thereafter, the student has the responsibility for consultation with members of his or her committee and for obtaining the approval of the committee on appropriate matters.

Student's program of study

No later than the end of a student's second semester, each student will, at some time before preregistration for the following term, meet with his/her major professor and, in consultation with other members of his/her Supervisory Committee, plan his/her academic program. This program is entered on an electronic form on the Graduate School website. Signatures from committee members are gathered electronically.

The student is then responsible for following the program through his/her academic career, for obtaining the Supervisory Committee's approval for any desired or needed changes, and for seeing that his/her major professor registers such changes with the Graduate School office.

Accelerated

Accelerated Music (BA)/Master of Business Administration (MBA)

The accelerated Accelerated Music (BA)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- MUSIC 731 - Music Business 1 **Credits: 2**
- MUSIC 732 - Music Business 2 **Credits: 2**
- MUSIC 733 - Music Marketing and Management Internship **Credits: 2**
- THTRE 712 - Theatre Management **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Master of Arts

Theatre (MA)

Provided through the Music, Theatre, and Dance graduate program, the Masters of Art degree in Theatre offers students a broad base of theatre courses and the ability to emphasize in a specific area, such as acting, directing, playwriting, design, management or technical theatre. The degree prepares students for teaching at the high school or community college level, for professional theatre work and for advanced study in theatre.

30 semester credits are required. All students must take: three 800-level 3 credit hour courses in dramatic literature; 3 credit hours in a 600- or above level course in acting, directing or playwriting; 3 credit hours in a 600- or above level course in design technical theatre or theatre management. The 15 remaining credits constitute electives which are usually in the student's area of concentration. At least 15 credits must be at the 800-level.

Each student must complete a creative project. Creative projects involve an extended original project with written reflection. A review of the candidate's work is conducted through an oral examination administered near the end of the degree program.

Students may apply for graduate teaching assistantship positions in public speaking, introduction to theatre, technical theatre or acting. These GTA positions cover the cost of tuition and pay an additional stipend.

Course Requirements

Students are admitted on the basis of their undergraduate transcripts and three letters of recommendation. A major in theatre is expected, but students with degrees in other areas may take undergraduate courses to make up deficiencies. A 3.0 overall undergraduate average is required, but students who do not meet this requirement may be admitted on probation.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

There are three categories to the degree requirements:

Required Courses (15 credits)

- Three 800-level 3 credit hour courses in dramatic literature
- 3 credit hours in a 600- or above level course in acting, directing or playwriting
- credit hours in a 600- or above level course in design technical theatre or theatre management

Elective Courses (15 credits)

- 15 credit hours of electives; 6 credit hours must be at the 800-level

Creative Project

Total Hours Required for Master's: 30

Theatre - Drama Therapy (MA)

Kansas State University is one of the few master level theatre programs in the U.S. which offers a concentration in drama therapy, which is offered through the Music, Theatre, and Dance graduate program. One of the strengths of the program is its strong theatre base and opportunities for creating drama-in-education, theatre-in-education, or issue-based community projects. Service learning and internships are incorporated into courses to provide students with direct client contact experiences.

The KSU MA program fulfills all of the requirements of the North American Drama Therapy Association's requirements of training and education toward registry (the national credential for drama therapy in the U.S.).

53 semester credits are required, including a minimum of 8 courses (24 credits) in drama therapy, 1 course in research methods (1 credit), 7 credits in drama therapy practicum/internship and supervision, and 6 courses (18 credits) in psychology, counseling and student development, educational leadership, family studies and human services, marriage and family therapy or anthropology.

Students' Masters Project (3 credits), Reports (2 credits) or Theses (6 credits) will focus on an aspect of drama therapy. These written projects will be presented to the student's committee in an Oral Examination.

Students in the drama therapy concentration may apply for Graduate Teaching Assistantship positions in the Theatre Department and other programs on campus. These GTA positions cover the cost of tuition up to 10 credits per semester and pay an additional stipend. Students may also apply for Graduate Assistantships in other programs on campus. These GA positions provide in-state tuition and pay a stipend.

Students are admitted on the basis of their application essay, undergraduate transcripts, three letters of recommendation and an interview. A major in theatre is expected, but students with degrees in other areas may take undergraduate courses to make up deficiencies. A 3.0 overall undergraduate average is required, but students who do not meet this requirement may be admitted on probation.

Course Requirements

Required Courses

- THTRE 820 - Principles of Drama Therapy **Credits: 3**
- THTRE 830 - Creative Arts Therapies **Credits: 3**

One course in improvisation from:

- THTRE 664 - Creative Drama **Credits: 3**
- THTRE 670 - Playback Theatre **Credits: 1-3**

One course in drama therapy with a specific population from:

- THTRE 630 - Topics in Theatre **Credits: 1-4**
- THTRE 665 - Drama Therapy with Special Populations **Credits: 3**
- THTRE 674 - Drama Therapy with Adolescents **Credits: 3**
- THTRE 675 - Drama Therapy with Older Adults **Credits: 1-3**

- THTRE 840 - Play Therapy Practices and Techniques **Credits: 3**

One course in Psychodrama or Sociodrama from:

- THTRE 784 - Psychodrama **Credits: 3**
- THTRE 785 - Sociodrama **Credits: 3**

Additional Required Courses to Complete Core:

- THTRE 710 - Practicum in Theatre **Credits: 0-6**
- Internship and Supervision **Credits: 7** (1 credit first semester, 2 credits for each of the next 3 semesters (spring and fall))
- THTRE 800 - Introduction to Graduate Studies in Theatre: Library, Research, and Information Skills **Credits: 1-3**
- THTRE 862 - Workshop in Playwriting **Credits: 3**
- THTRE 865 - Ethics and Professionalism in Drama Therapy **Credits: 3**
- One 3 credit drama therapy elective or the equivalent in 1 or 2 credit drama therapy courses.

Psychology Courses (18 credits)

A minimum of six courses from the following:

One course in Research from:

- ANTH 710 - Writing Cultures: Ethnographic Methods **Credits: 3**
- ANTH 715 - Research Methods in Digital Ethnography **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- HDFS 888 - Research Methods in Human Development and Family Science **Credits: 3**
- THTRE 810 - Survey of Research in Drama Therapy **Credits: 3**

One course in Group Processes from:

- CFT 870 - Couples and Sex Therapy **Credits: 3**
- CFT 872 - Family Therapy **Credits: 3**
- CNRES 751 - Interpersonal Conflict Skills and Strategies **Credits: 3**
- EDCEP 858 - Group Processes **Credits: 3**
- HDFS 785 - Family Dynamics **Credits: 3**

One course in Developmental Psychology from:

- HDFS 786 - Lifespan Development **Credits: 3**
- ECED 810 - Child Development **Credits: 3**
- ECED 820 - Theories of Human Development **Credits: 3**

One course in Abnormal Psychology or Psychopathology from:

- CFT 879 - Systemic Assessment and Treatment of Psychopathology **Credits: 3**
- PSYCH 505 - Introduction to Psychopathology **Credits: 3**

One course in Theories of Personality/Theories of Counseling from:

- EDCEP 823 - Counseling Theory **Credits: 3**
- PSYCH 520 - Life Span Personality Development **Credits: 3**
- THTRE 876 - Seminar in Theatre **Credits: 3**

One course in Multicultural Counseling from:

- EDCEP 951 - Multicultural Counseling **Credits: 3**

Project, Thesis, or Report

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Project: Demonstration of competence in a specific area of drama therapy (3 credits)

Report: Writing a research paper for the purposes of gathering and assimilating information on a particular topic of drama therapy (2 credits)

Thesis: Writing of a lengthy research paper that makes an original contribution to the field of drama therapy (6 credits)

Oral Examination on Project, Report, or Thesis

Total Hours Required for Master's: 53

Master of Music

Master of Music (MM)

Gain the fundamental skills and practical training needed by all music educators in this hybrid program designed around the busy schedules of teachers.

Designed for music educators at all levels, this master's degree will improve your knowledge in a variety of skills, techniques and concepts. The hybrid Master of Music program consists of online coursework and an intensive one-week session on the main K-State campus in Manhattan, Kansas. The program offers four areas of study from which to choose: choral, elementary/general, band and orchestra.

Course Requirements

Kansas State University offers the Master of Music degree with specialization in the following areas: music education, performance, music history/literature, keyboard pedagogy, and composition. The degree requires a minimum of between 32 and

36 credit hours including a master's report (or recital) or a master's thesis. Music education majors may elect to take 36 credit hours without master's report or master's thesis. Graduate students cannot register for both graduate report and graduate thesis.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

A Placement Examination will determine whether or not academic deficiencies exist. If they are present, the student is required to enroll in the appropriate remedial courses or by doing independent study before re-examination.

See areas of specialization for further explanation. (MUSIC 802, taken during the summer, does not fulfill the seminar requirement.)

- **MUSIC 801 - Introduction to Graduate Study in Music Credits: 2**
Theory and history-literature 11-12 hours, including MUSIC 702 and at least one seminar course or MUSIC 767.
- **MUSIC 702 - Style Analysis Credits: 3**
- **MUSIC 767 - Topics in American Music Credits: 3**
History options include:
 - **MUSIC 156 - Introduction to the Broadway Musical Credits: 3**
 - **MUSIC 466 - Music History I: Ancient Greece to Beethoven Credits: 3**
 - **MUSIC 467 - Music History II: Beethoven to Present Credits: 3**
 - **MUSIC 468 - Music History III: 1850 to the Present Credits: 3**
 - **MUSIC 726 - History of the Opera Credits: 3**
 - **MUSIC 766 - Seminar in the Life and Works of an Individual Composer Credits: 3**
 - **MUSIC 803 - Seminar in Music History Credits: 2**
 - **MUSIC 807 - History and Philosophy of Music Education Credits: 3**
 - **MUSIC 830 - Seminar in Medieval and Renaissance Music Credits: 3**
 - **MUSIC 832 - Seminar in Baroque Music Credits: 3**
 - **MUSIC 834 - Seminar in Classical Music Credits: 3**
 - **MUSIC 836 - Seminar in Romantic Music Credits: 3**
 - **MUSIC 837 - Seminar in 20th-Century Music Credits: 3**Theory options include:
 - **MUSIC 711 - Concert and Ethnic Percussion Techniques Credits: 2-3**
 - **MUSIC 714 - Advanced Orchestration Credits: 2**
 - **MUSIC 724 - 18th Century Counterpoint Credits: 2**
 - **MUSIC 725 - Theories of Contemporary Music Credits: 2**
 - **MUSIC 802 - Seminar in Music Theory Credits: 3**
 - **MUSIC 804 - Advanced Analysis Credits: 3**
 - **MUSIC 857 - Advanced Composition Credits: 1-2**Literature options include:
 - **MUSIC 704 - Symphonic Literature Credits: 3**
 - **MUSIC 705 - Chamber Music Literature Credits: 3**
 - **MUSIC 706 - Song Literature Credits: 3**
 - **MUSIC 707 - History of Wind Bands Credits: 3**
 - **MUSIC 708 - Choral Literature Credits: 3**
 - **MUSIC 737 - Organ Literature Credits: 3**
 - **MUSIC 738 - Piano Literature Credits: 3**

- MUSIC 740 - Studies in Music Literature **Credits: 3**

Requirements for individual areas of specialization

Music education

Admission

An applicant in music education may arrange a personal audition or send a recording demonstrating ability in the major area of performance as part of the admission process. Those who do not do so will audition during the registration period.

Required Courses

As above with the following amplification: MUSIC 807: History and Philosophy of Music Education is required.

Performance

4 hours individual instruction in the major performance area of the student's undergraduate study, or in a chosen secondary performance area, or in advanced conducting.

Major field

Music education core: (6 credit hours.)

- MUSIC 805 - Theories of Music Education **Credits: 3**
- MUSIC 808 - Research in Music Education **Credits: 3**

Music education electives: (6-7 credit hours)

not more than 2 hours of 811 or 814 may be counted

- MUSIC 806 - Psychology of Music **Credits: 3**
- MUSIC 809 - Seminar in Music Education **Credits: 3**
- MUSIC 811 - Symposium in Music **Credits: 2**
- MUSIC 814 - World Music Pedagogy, Culturally Relevant Pedagogy, and Special Populations in Music Education **Credits: 3**

Master's report: (2 credit hours)

With the approval of the student's advisory committee and the graduate faculty of the area concerned, the requirements may be satisfied by one of the following:

1. A scholarly paper on some aspect of the student's major area of teaching;
2. An original composition of acceptable proportions, with an accompanying report;
3. A recital on the student's major instrument, the recital to be given under the conditions listed under the performance major;
4. Six additional semester hours of graduate courses in music education and/or advanced courses related field, (e.g., art, drama, education, philosophy, psychology, statistics, etc.).

Performance

Admission

Each student wishing to major in performance must audition in person or send a recording of a recent concert. The audition, or audition recording, must be of substantial length and include music from at least three different style periods. The audition must be approved by the faculty of the appropriate division.

Required Courses

As above with the following amplifications: History-Literature hours must include:

For wind and percussion students:

- MUSIC 704 - Symphonic Literature **Credits: 3**

For choral conducting students:

- MUSIC 708 - Choral Literature **Credits: 3**

For band conducting students:

- MUSIC 707 - History of Wind Bands **Credits: 3**

For string students:

- MUSIC 705 - Chamber Music Literature **Credits: 3**

For voice students:

- MUSIC 706 - Song Literature **Credits: 3**

For organ students:

- MUSIC 737 - Organ Literature **Credits: 3**

For piano students:

- MUSIC 738 - Piano Literature **Credits: 3**

Electives (4 to 6 credit hours)

Major field

A minimum of 12 hours in the division of the student's major performance area, 8 hours of which must be individual instruction. The remaining 4 hours may be in pedagogy, methods, or ensemble. Voice majors who are found deficient in knowledge of foreign language diction will take 1 hour of diction.

Master's report (recital), (2 credit hours)

All graduate students majoring in performance will perform a full recital of not less than one hour. The program for the recital must be approved by the student's advisory committee, and the advisory committee will judge the recital. All solo literature (including concertos) will be played from memory, unless the advisory committee grants an exception in recognition of unusual circumstances. The recital will be digitally recorded and the recording uploaded to EDTR, with supporting material, for presentation as a master's report. The student will also either (a) prepare substantial program notes of a historical and analytical nature, these notes to be with the recorded recital; or (b) present a lecture-recital on a major work not included on the master's recital, the lecture-recital to be recorded and uploaded to EDTR with the master's recital. Under both options a and b, the project is to be done under supervision of the major professor or the director of graduate studies. The program notes or the lecture should demonstrate the student's ability to investigate and interpret the historical aspects of a work, to analyze style, and to use commendable English. The literary standards should be comparable to those required for the usual master's report. Under option b the student's choice of a work must be approved by his or her advisory committee.

Additional requirements and policies: students in areas in which ensemble performance plays an important role will be expected to take part in appropriate ensembles and organizations as determined in consultation with the student's advisory committee.

History-literature

Required Courses

As above.

Performance

Collegium Musicum, 2 hours.

Major field

12 hours minimum

including at least 9 hours from the following:

- MUSIC 709 - History of School Choral Music **Credits: 3**
- MUSIC 830 - Seminar in Medieval and Renaissance Music **Credits: 3**
- MUSIC 832 - Seminar in Baroque Music **Credits: 3**
- MUSIC 834 - Seminar in Classical Music **Credits: 3**
- MUSIC 836 - Seminar in Romantic Music **Credits: 3**
- MUSIC 837 - Seminar in 20th-Century Music **Credits: 3**

Master's report: (2 credit hours.)

OR

Master's thesis: (6 credit hours)

This option is open by permission to history majors who are not required to take 601 and who have a special interest in research.

Electives (2 to 8 credit hours)

Additional requirements

Reading knowledge of foreign language; German or French preferred, Italian, Latin, Russian, or Spanish acceptable.

Oral examination

In defense of thesis or report.

Piano pedagogy

Major field

6 hours individual instruction and the following courses:

- MUSIC 821 - Piano Pedagogy I **Credits: 3**
- MUSIC 822 - Piano Pedagogy II **Credits: 3**
- MUSIC 823 - Supervised Teaching in Piano **Credits: 2**
- MUSIC 824 - Half Recital in Piano **Credits: 1**
- MUSIC 825 - Lecture Recital in Piano **Credits: 1**

Master's report (recital)

In place of a master's recital and report, all students will present a lecture–recital that will be musically-illustrated presentation on some aspect of piano pedagogy. MUSIC 824 and MUSIC 825 will replace the two credits of MUSIC 898 Graduate Report.

Composition

Admission

Entrance to the program normally requires at least 26 undergraduate hours of composition courses. The applicant should submit original scores to the composition faculty for approval.

Required Courses

As above with the following amplification:

- MUSIC 837 - Seminar in 20th-Century Music **Credits: 3**

Performance

One course (2 hours) in advanced conducting or score reading.

Major field

Total, 16 hours, as follows: 10 to 14 hours, including MUSIC 802 (Seminar in Music Theory) or MUSIC 804 (Advanced Analysis), and individual instruction in composition; and master's report, 2 hours or master's thesis, 6 hours. The report or thesis may be either a theoretical paper or a composition in a larger form with an accompanying report.

- MUSIC 802 - Seminar in Music Theory **Credits: 3**
or
- MUSIC 804 - Advanced Analysis **Credits: 3**

Electives (Up to 6 credit hours.)

Additional requirements and policies

The composition student must prove his or her proficiency in conducting and in electronic instrumentation, either by class study or by actual performance in the area.

All students receiving individual instruction in composition are required to copy their music in the prescribed professional manner.

Wherever possible, the composer should assume the responsibility of seeing to the performance of his or her own music.

Music Education Summer Program

Please visit <http://www.k-state.edu/musiceducation/summergrad/index.html> for more information.

Required Courses (17 credit hours)

- MUSIC 707 - History of Wind Bands **Credits: 3**
OR
- MUSIC 709 - History of School Choral Music **Credits: 3**
- MUSIC 801 - Introduction to Graduate Study in Music **Credits: 2**
- MUSIC 802 - Seminar in Music Theory **Credits: 3**
- MUSIC 807 - History and Philosophy of Music Education **Credits: 3**
- MUSIC 808 - Research in Music Education **Credits: 3**

Major Field (15 credit hours)

- MUSIC 719 - Marching Band Techniques **Credits: 2**
OR
- MUSIC 720 - Choral Ensemble Techniques **Credits: 2**
- MUSIC 728 - Advanced Instrumental Rehearsal Techniques **Credits: 2**
OR
- MUSIC 729 - Advanced Choral Rehearsal Techniques **Credits: 2**
- MUSIC 805 - Theories of Music Education **Credits: 3**
- MUSIC 858 - Advanced Choral Conducting **Credits: 1-2**
OR
- MUSIC 859 - Advanced Instrumental Conducting **Credits: 1-2**

Choose one from the following:

- MUSIC 722 - Arranging for Bands **Credits: 2**
- MUSIC 730 - Organization and Administration of School Music Programs **Credits: 2**
- MUSIC 806 - Psychology of Music **Credits: 3**

Electives (4 credit hours)

- MUSIC 710 - Percussion Pedagogy **Credits: 2-3**
- MUSIC 711 - Concert and Ethnic Percussion Techniques **Credits: 2-3**
- MUSIC 712 - Jazz and Marching Percussion Techniques **Credits: 2-3**
- MUSIC 721 - Jazz Techniques **Credits: 2**

Masters Report (2 credit hours)

With the approval of the student's advisory committee and the graduate faculty of the area concerned, the requirements will be satisfied by a scholarly paper that includes detailed analysis of performance literature, rehearsal plans, and performance documentation in the student's major area of teaching.

Master's report or thesis

The master's report should demonstrate the student's ability to locate and gather information, to organize this information, and to interpret and evaluate it. While the subject need not be taken from a totally unexplored area, the master's report should reflect originality of thought and approach, and it must represent essentially the student's own work. The report is written with the guidance of the major professor. The director of graduate studies is the second reader and should be consulted early in the work. The other member of the advisory committee also reads the report and should be consulted well before the work is finished.

The master's thesis differs from the report only in the broader scope and greater length required.

Both the thesis and the report must be in clear and commendable English. The form and style should follow Irvine's Writing About Music, 3rd edition, revised and enlarged by Mark A. Radice (Portland, Oregon: Amadeus Press, 1999). (Music education majors will use the Publication Manual of the American Psychological Association, most current edition, instead.)

For discussion of the master's report (recital), see above under the performance specialization.

Final examination

The purpose of the final examination is to expose required learnings from your graduate program of study and should include questions from the three general areas: the candidate's major field, history-literature, and theory. The candidate will be expected to demonstrate a breadth of knowledge in the field of music covered in their course work. The final examination for the master of music degree consists of either a written examination of four questions to be answered within a four hour period of time or an oral defense of their master's recital/report/thesis. The responsibility for evaluating the examination lies with the candidate's supervisory committee. Although focused on the program of study, the candidate will be expected to demonstrate a breadth of knowledge in the field of music beyond that covered in course work, as well as the ability to relate his or her special area to other areas. The responsibility for evaluating the examination lies with the candidate's supervisory committee.

Problems courses

Not more than three hours in MUSIC 799: Problems in Music should ordinarily be applied to the master's degree except that two hours of Problems in Music may be applied to the master's report.

The purpose of the Problems in Music course is to provide opportunity for guided independent study in areas not included in regular course offerings. If scheduling difficulties have made it impossible for the student to take a needed or desired course, Problems in Music may be used to cover that subject matter.

Symposium in music and workshops

MUSIC 811: Symposium in Music and the other short, concentrated workshop courses, designed especially for school music teachers and supervisors, are given during the summer session. Often these are taught by visiting musicians and educators of national prominence. The symposium and various workshops carry graduate credit, but only 2 hours of these courses may be applied toward the master's degree. Further information may be obtained from Professor Jana Fallin, Department of Music, Kansas State University, 109 McCain Auditorium, Manhattan, KS 66506-4702.

Total Hours Required for Master's: 32-36

Philosophy

Bruce Glymour, Head
201 Dickens Hall
785-532-6758
Fax: 785-532-3522
philosophy@k-state.edu
<http://www.ksu.edu/philos/>

Physics

Timothy A. Bolton, Head
Gary Wysin, Director of Graduate Studies

116 Cardwell Hall
785-532-6786
Fax: 785-532-6806
graduate@phys.ksu.edu
<http://www.phys.ksu.edu/>

Program description

The research programs of the Department of Physics are focused in the areas of atomic, molecular and optical physics, condensed, soft and biological matter physics, physics education, cosmology, and high energy physics. We have concentrated our major research commitments in these areas to maintain strength and balance. The Department of Physics offers graduate programs leading to the M.S. and Ph.D. degrees. These are described here with the research interests of the faculty. Our graduate core curriculum is an excellent foundation for work in a large variety of specialties.

Careers

Graduate study in physics provides training for many varied academic and technological careers. Graduates in physics at all levels have found attractive careers in industrial and governmental laboratories and in academic departments. Graduates from K-

State are presently engaged in communications research, x-ray laser development, genetic research, university teaching and research in various areas of physics, petroleum research, industrial electronics, and many other fields. M.S. graduates generally occupy skilled technical positions and Ph.D. graduates generally occupy positions requiring independent work in a wide range of areas.

Research and facilities

Atomic, molecular and optical physics

The experimental atomic, molecular and optical physics group is involved in a diverse program that investigates the interactions of atoms, molecules and light using intense ultrashort laser pulses. High harmonic generation, ionization, electron re-scattering and molecular breakup are a few of the problems being investigated using the state-of-the art lasers housed in the James R. Macdonald Laboratory (JRML), which can produce pulses from the infrared to X-ray regimes. The Laboratory also houses research using ultrafast fiber lasers to investigate frequency combs, with a goal of developing applications useful in the telecommunications industry, and research into the coherent control of cold photo-association collisions.

The results of the experiments carried out in the lab are compared to the theoretical predictions made by the Kansas-State theory group as well as by theorists elsewhere. The close interplay between theorists and experimentalists often leads to a better understanding of the physics and in some cases suggests new phenomena, experimental methods, or improved calculation methods. The combination of strong groups in both theory and experiment within the same department makes Kansas State one of the leading atomic, molecular and optical physics groups in the world. Because of this, we have attracted researchers from around the world to come to Kansas State to carry out their experiments.

Condensed, soft and biological matter physics

Our condensed matter physics group performs research in a multitude of areas, including controlled assembly of nanoparticles into 2-D and 3-D solids, the stretching of proteins, and growth of nanowires and their application to living cells. Our soft and biological matter group works at the interface of physics, chemistry and biology.

Cosmology and particle astrophysics

The K-State cosmology group studies the physical properties and evolution of the Universe. Questions we are trying to address include: Why is the Universe's expansion accelerating? What is Dark Energy and Dark Matter? We develop theoretical models and look into cosmological data to provide answers to these fundamental questions."

High energy physics

This group studies physics at the smallest known scales of the universe; the indivisible particles that make up atoms and matter. The group seeks to provide answers to many fundamental questions of physics such as the existence of extra dimensions of space, dark energy and the nature of the dark matter of the universe and the origin of mass. The group members collaborate with many groups throughout the world, including the Fermilab near Chicago, and with CERN in Switzerland, where recently they were involved in discovering the Higgs boson.

Physics education research

The physics education research group conducts research related to the teaching and learning of physics, and develops learning materials based on that research and the research of others. The group continues to develop cutting-edge teaching technology, as well as improve both in-service and pre-service teacher education.

Financial support

The department is continually awarded outside support for research and teaching. The extramural research support for the department has averaged over \$6.5 million during each of the last four years. This support is important for the graduate student because it is an indication that the research conducted by the department is regarded highly by the research peers who review the department's proposals. It also indicates that a large number of graduate research assistantships are available in the department. Exceptional students can compete for university graduate fellowships and graduate fellowships offered by the Graduate School. Applications must be completed by January 8 to be considered for a fellowship. The schedule for teaching assistants is about 8 to 10 hours per week in laboratory sections in the introductory physics courses. Summer appointments as research assistants are generally available. The stipend is sufficient for a comfortable life in Manhattan.

Doctor of Philosophy

Physics (PHD)

Program description

The research programs of the Department of Physics are focused in the areas of atomic, molecular and optical physics, condensed soft and biological matter physics, cosmology and particle astrophysics, high energy physics, and physics education research. We have concentrated our major research commitments in these areas to maintain strength and balance. The Department of Physics offers graduate programs leading to the Ph.D. degree. These are described here with the research interests of the faculty. Our graduate core curriculum is an excellent foundation for work in a large variety of specialties.

Admission Requirements

For regular admission to the graduate program, a bachelor's degree in physics, a minimum upperclass GPA of 3.0, and the results of the GRE advanced test in physics are recommended. Candidates with degrees in mathematics, chemistry or engineering will also be considered. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate. Students from non-English speaking countries are required to show proficiency in English via the TOEFL, IELTS or PTE exams. See <http://www.k-state.edu/grad/admissions/application-process/international/index.html#English-Proficiency-Requirements> for more information. Applications for admission to the program in the fall semester should be completed by January 1 at <https://www.applyweb.com/kstateg/>.

Careers

Graduate study in physics provides training for many varied academic and technological careers. Graduates in physics at all levels have found attractive careers in industrial and governmental laboratories and in academic departments. Graduates from K-State are presently engaged in communications research, x-ray laser development, genetic research, university teaching and research in various areas of physics, petroleum research, industrial electronics, and many other fields. M.S. graduates generally occupy skilled technical positions and Ph.D. graduates generally occupy positions requiring independent work in a wide range of areas.

Research areas

Experimental atomic physics

The experimental atomic, molecular and optical physics group is involved in a diverse program that investigates the interaction of highly-charged ions with various target media. The ions are created as beams by several ion sources and accelerators located in the J. R. Macdonald Laboratory for atomic physics. The ion beams used in the experiments have a well-defined charge and energy and are thus ideally suited to investigating the behavior of collisions under a variety of well-defined conditions. Single- and multi-electron atomic and molecular processes are investigated by observing the final ionic species and their decay products.

The targets in these collisions consist of ground state and laserexcited atoms and molecules, as well as atomic and molecular ion beams. Many measurements are precise enough to provide information about the specific quantum mechanical states involved in the reaction. The results of these observations are compared to the theoretical predictions made by the Kansas-State theory group as well as by theorists elsewhere. The close interplay between theorists and experimentalists often leads to a better understanding of the physics and in some cases suggests new phenomena, experimental methods, or improved calculation methods. The combination of strong groups in both theory and experiment within the same department makes Kansas State one of the leading atomic physics groups in the world. Because of this, we have attracted researchers from around the world to come to Kansas State to carry out their experiments.

A new ultra-short pulse, ultra-high intensity laser system is being used to study the interaction of the laser light with atoms, ions and molecules. High harmonic generation, ionization, electron re-scattering and molecular breakup are a few of the problems being investigated. The theorists are working in close collaboration with the experimentalists in these endeavors.

Experimental condensed matter physics

The experimental condensed matter group at K-State is conducting research in a wide range of often inter-related areas.

Research on condensed phases include the physics of aggregates, their optics (scattering and absorption), morphology, how they form and how they move; particularly in the context of aerosols, synthesis and properties (magnetic and optical) of nanoparticles and their assemblies (such as superlattices and gels) and of water, especially supercooled, and aqueous solutions.

Phase transitions at liquid surfaces and within multilayer liquid films are being studied via optical techniques in order to better understand the physics at the boundaries of bulk materials. Surface structure is strongly influenced not only by the interactions at interfaces but also by any phenomena which is occurring in the adjacent bulk medium. We have therefore been studying (i) the coupling between bulk second order phase transitions and surface phenomena where we have observed universal surface critical behavior in both semi-infinite systems and within thin films and (ii) surface interactions and how these influence and govern surface phase transitions and surface dynamics on a molecular level. A more complete understanding of surface phenomena will be of benefit for many important technological and biological processes, such as, surface chemical reactions, lubrication, and fluid flow through biological membranes or porous media.

Magnetic nanostructures such as nanoscale particles, single layers and multilayers containing rareearths are prepared by sputter deposition. Making materials small modifies their properties in a number of interesting ways and in this work we look at how the properties of permanent magnets based on Nd₂Fe₁₄B and SmCo₅ are modified. Magnetic properties down to 5 K are studied in fields up to 55 kOe and the structure of the materials is characterized with x-ray diffraction and electron microscopy. Our effort can be divided into two areas: 1) improving the hard magnetic properties of permanent magnets (coercivity, energy product) by preparing these materials in very small form, 2) understanding how the observed improvements can be explained in terms of size and interfacial effects.

Experimental high energy physics

The High Energy Physics group has strong research programs in collider physics. Kansas State physicists are playing a key role in building the silicon vertex detector for the next upgrade of the D0 experiment at Fermilab, and are now analyzing data from the frontier of high energy proton-antiproton collisions from the previous D0 experiment. To remain at the energy frontier, they are also heavily involved in preparations for the CMS experiment now under construction at CERN.

The High Energy Physics group is also strong in neutrino physics. K-State physicists have major roles in data analysis and Monte Carlo simulation for the KamLAND experiment and the proposed Double CHOOZ and Braidwood experiments. HEP group

members are leaders in the background working group of Braidwood and the on-line group of Double CHOOZ, and have initiated several local research projects to advance the future development of Braidwood, Double CHOOZ, and KamLAND.

Theoretical and computational physics

The department offers a diversified program in theoretical and computational physics, including atomic, solid state, soft condensed matter, molecular and surface physics, statistical mechanics, materials physics, cosmology and particle astrophysics. There is significant interaction between experimentalists and theorists within the department and there is also collaboration with faculty in chemistry, biochemistry and engineering. Seminars are held weekly in several of these areas.

Computational physics students are trained to solve accurately and efficiently problems in physics using a wide range of computational techniques. An important aspect of the training is the presentation of problem solutions in a way that can be easily visualized and understood. Various algorithms for molecular dynamics simulation, Monte Carlo methods, ab-initio electronic structure calculations and solutions of generalized Langevin equations are being developed. A strong focus in this area is in the development of efficient algorithms to best exploit the benefits of parallel architecture in modern computers.

A broad range of computational facilities is available in our department with the main computations being carried out using the departmental cluster of Compaq Alpha workstations, high-end and low-end Unix and Linux workstations, and the high performance computational environment provided by clusters of Linux computers. A number of faculty members and their students use supercomputers at national centers in their work, in addition to facilities housed on our own campus.

Some studies of mathematical methods in physics have also been carried out by our faculty and graduate students. These include: studies in group theory with application to atoms, molecules, and nuclei; development of the method of hyperspherical coordinates; and development of complex integration with application to Coulomb wavefunctions. Mathematical aspects of formulations of the fewbody and many-body problem have also been developed in our department.

There is strong national and international collaboration with other colleagues. We have a steady exchange with scientists in Argentina, Brazil, China, Denmark, England, France, Finland, Germany, India, Italy, Japan, Korea, Pakistan, Portugal, Spain, Sweden, and Taiwan. We participate actively in conferences ranging from regional to international. Professors, graduate students and post-doctoral fellows all take part in these meetings.

Theoretical atomic and molecular physics

A broad range of topics in both scattering theory and atomic and molecular structure are studied. These studies are often initially motivated by the need to understand experimental results; they provide broader perspectives on electronic interactions in atoms that are then further tested in experiments. To complement this focus on experimentally driven results, investigations of a fundamentally theoretical nature are also carried out including the development of novel theoretical and computational methods. Theoretical models for collisions of ions, electrons, and photons with atoms and molecules over a broad range of energies are being developed to understand the transfer of energy and momentum among the collision partners. These studies are developed to understand the results of experiments performed at Kansas State and at other laboratories. The study of atomic structure covers a detailed mapping of the de-excitation of atoms and ions produced in such collisions. Our studies of multiply excited states of atoms using hyperspherical coordinates are revealing the similarity between the collective electronic excitations of atoms and the rotational-vibrational modes of polyatomic molecules. Our investigations of interactions of ions (atoms) with surfaces and clusters (such as C₆₀) contribute to a better understanding of corrosion, catalysis, and the still new field of fullerene chemistry.

Theoretical condensed matter physics

The Theoretical Condensed Matter Physics group works in a number of related areas, trying to understand structural, physical, chemical, electronic, vibrational, magnetic, optical, and other properties of solids and condensed phases. The types of systems studied include polymer mixtures and block copolymers, polymer films on rough substrates, metals and semiconductors and their alloys, surfaces, nanocrystallites and nanostructures, chemisorbed gases, magnetic layers, and fine magnetic particles. Theorists working in condensed matter theory apply quantum mechanics, statistical mechanics and advanced computational techniques such as ab-initio electronic structure calculations and classical and quantum Monte Carlo and molecular dynamics simulations, to model the fundamental interactions between atoms and molecules in a material. All of our theorists use computation as an important tool. In addition to achieving a basic theoretical understanding of how atomic interactions lead to interesting macroscopic behavior, an important goal of our condensed matter theorists is to describe many phenomena of technological importance, such as corrosion, catalysis, wetting, phase changes, magnetic and electronic data storage, and friction and nanotribology. Ultimately, theory developed in collaboration with experimentalists will contribute towards the development of novel materials and new and interesting devices based on those materials.

Cosmology and particle astrophysics

The cosmology research program spans both theoretical work and analyses of cosmological data. On the theoretical side we work on developing models for the large-scale matter and radiation distributions in the Universe. We study observational consequences of Dark Energy and gravity models and test them by comparing their predictions with observational data, including the anisotropy in the cosmic microwave background radiation, and the mass correlation function.

Physics education

The Physics Education Research Group at K-State investigates the learning and teaching of physics using methods drawn from physics education research, the learning sciences, and science education. The group applies evidence from research to develop ways to improve physics learning. In recent years the work of this group has concentrated research on how students learn physics and mathematics, how they come to think as physicists, and ways to make this and other research available to physics instructors at all levels. Further efforts have involved the development of learning materials for the high school and college level and the training and support of science teachers and physics faculty members through both in-person and online resources.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Physics (MS)

The Master of Science in Physics degree is a 30 credit degree to meet the needs of students interested in expanding their knowledge of physics beyond the undergraduate level, who wish to pursue careers in skilled technical fields that include basic science & research, space & earth science, environmental science, lasers, engineering, medicine, computers, education, industry, and science communications. There is i) a research thesis option for those who wish to apply their efforts to original research in some field of physics, and ii) a research report option for those who wish to apply their efforts in understanding or describing a topic in physics. The research areas available to students are 1) atomic, molecular and optical physics, 2) condensed, soft, and biological matter physics, 3) cosmology and particle astrophysics, 4) high energy physics, and 5) research in physics education.

Admission Requirements

For regular admission to the graduate program, a bachelor's degree in physics or closely related field (mathematics, chemistry, or engineering) with a minimum GPA of 3.0 is recommended. Other requirements are those of the Graduate School. Preference is given to applicants in the PhD program. Prospective students must submit a completed graduate school application form, transcripts of previous coursework, a statement of objectives, and three letters of recommendation. GRE exams are not required but can be submitted if available. Students from non-English speaking countries are required to show proficiency in English via the TOEFL, IELTS or PTE exams. See <http://www.k-state.edu/grad/admissions/application-process/international/index.html#English-Proficiency-Requirements> for more information. Applications for admission to the program in the fall semester should be completed by the early January deadline. See Application for Admission (k-state.edu).

Graduation Requirements

M.S. Degree Requirements

- 30 credit hours of coursework are required.
- For the research report option, students must write a report and enroll in 2 hours of credit in PHYS 899.
- For the research thesis option, students must write a research thesis and enroll in 6 to 8 hours of credit in PHYS 899.
- Students must select either the report option or the thesis option by the end of the second semester in the M.S. program. By the same deadline, the student must select a major professor and form a supervisory committee and file a program of study. If the degree option is not explicitly chosen in the program of study, it will default to the thesis option.
- There is no departmental qualifying exam for the M.S. degree.
- The student will present a copy of the thesis or report to each member of their supervisory committee, in advance of the student's final oral exam for the M.S. degree, which will be conducted as outlined in the Graduate School Handbook.

Course Requirements

The program of study for the M.S. in physics program requires 30 total credit hours, selected from the following:

Required Courses

(23 credit hours)

- PHYS 801 - Mathematical Methods of Physics **Credits: 3**
- PHYS 806 - Journal Club **Credits: 1-18**
- PHYS 807 - Graduate Physics Seminar **Credits: 1**
- PHYS 811 - Quantum Mechanics I **Credits: 3**
- PHYS 821 - Advanced Dynamics **Credits: 3**
- PHYS 831 - Electrodynamics I **Credits: 3**
- PHYS 911 - Quantum Mechanics II **Credits: 3**
- PHYS 931 - Electrodynamics II **Credits: 3**
- PHYS 971 - Statistical Mechanics **Credits: 3**

Elective Courses

7 or more credit hours

- PHYS 701 - Cosmology **Credits: 3**
- PHYS 707 - Topics in Physics **Credits: 1-18**
- PHYS 709 - Applied Quantum Mechanics **Credits: 3**

- PHYS 741 - The Physics of Lasers **Credits: 3**
- PHYS 775 - Biological Physics **Credits: 3**
- PHYS 800 - Problems in Physics I **Credits: 1**
- PHYS 802 - Computational Methods in Physics **Credits: 4**
- PHYS 808 - Advanced Problems **Credits: 1-18**
- PHYS 850 - Theory of Atomic Structure and Atomic Interactions **Credits: 3**
- PHYS 860 - Electron and Ion Impact Phenomena **Credits: 3**
- PHYS 870 - Nonlinear and Quantum Optics **Credits: 3**
- PHYS 881 - Introduction to Solid State Physics **Credits: 3**
- PHYS 899 - Research in Physics **Credits: 1-18**
- PHYS 907 - Advanced Topics in Physics **Credits: 0-18**
- PHYS 912 - Advanced Quantum Mechanics **Credits: 3**
- PHYS 913 - Advanced Topics in Mathematical Physics **Credits: 3**
- PHYS 914 - Quantum Field Theory **Credits: 3**
- PHYS 915 - Quantum Field Theory II **Credits: 3**
- PHYS 953 - Advanced Topics in Atomic Interactions **Credits: 1-18**
- PHYS 981 - Solid State Physics **Credits: 3**
- PHYS 982 - Advanced Topics in Solid State Physics **Credits: 3**

Total Hours Required for Master's: 30

Political Science

Nathaniel Birkhead, Head

Ethan Bernick, Director of Master of Public Administration

Michael Flynn, Assistant Director of Security Studies

101D Calvin Hall

785-532-6842

polsci@k-state.edu

<http://www.k-state.edu/polsci/>

Admissions Criteria

To be eligible for admission, a student must have a bachelor's degree with a minimum of 3.0 GPA (on a 4.0 scale). Others with at least a 2.7 GPA may be admitted on probation, or on special student category. Admission to the MPA and MA programs and financial assistance are based on academic accomplishment and promise. Admission applications are welcome at any time.

Application Procedure

- Go to <https://www.applyweb.com/apply/kstateg/> to fill out an online application. Supporting documents need to be uploaded directly with your application.
- Supporting materials for *domestic* students:
 - Payment of a processing fee will be required before officially submitting your graduate school application.
 - Statement of objectives.

- 3 letters of recommendation [must be originals on official letterhead uploaded directly to your application by your references].
- Transcripts from all previous colleges attended [must be originals].
- Supporting materials for *international* students:
 - Payment of a processing fee will be required before officially submitting your graduate school application.
 - Statement of objectives.
 - 3 letters of recommendation [must be originals on official letterhead uploaded directly to your application by your references].
 - Transcripts from all previous colleges attended.
 - TOEFL or other English language competency score: less than 2 years old.
 - Financial affidavit plus **original** bank documents: **MUST BE CONVERTED TO USD.**

International Students: English Language Competency

- The Graduate School requires each international applicant whose native language is not English to demonstrate competence in the English language by achieving a satisfactory score (defined below) on the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS) and Pearson Test of English (PTE). The TOEFL, IELTS or PTE is required to ensure that the student's progress toward a degree is not jeopardized by language barriers.
- The TOEFL (K-State TOEFL school code 6334) is offered several times a year throughout the world by the Educational Testing Service, Princeton, New Jersey.
- International applicants are advised to take the TOEFL as early as possible to avoid delays in the processing of their applications for admission. However, the test date should be no older than eighteen months from the application deadline for international applicants.
- **English Proficiency Requirements**
 - Applicants who are submitting IBT TOEFL (internet based) scores must have a minimum total score of 79 with no part score below 20 on the reading, listening, and writing sections.
 - Applicants who are submitting paper-based TOEFL (PBT) test scores must have a minimum total score of 550 with no part score below 55 on reading or listening sections and a TWE (Test of Written English) score of 5.0 or higher.
 - Applicants who are submitting an IELTS score must have a minimum total score of 6.5 with part scores of 6.5 or higher on the reading, listening, and writing sections.
 - Applicants who are submitting a Pearson Test of English (PTE) score must have a minimum total score of 58 with part scores of 58 or higher.
 - Applicants who do not meet the scores specified above must meet the following criteria during the first semester of enrollment in order to satisfy the English proficiency requirement:
 - Applicants with **one or two low part scores** (14-19 IBT, 48-54 PBT, 5.0-6.4 IELTS, or 47-57 PTE) must successfully complete one or more of the specified classes based on the section of the examination that is below the minimum (20 IBT; 55 on reading or listening sections and a TWE of less than 5.0 on PBT; 6.5 IELTS; 58 PTE):
 - Applicants with **three part scores below** 20 IBT, 55 PBT, 6.5 IELTS, or 58 PTE are required to take the English Proficiency Test (EPT) and successfully complete the English course(s) specified on their EPT score reports.
 - Applicants with any one score below 14 IBT, 48 PBT, 5.0 IELTS, or 47 PTE must take the English Proficiency Test and successfully complete full time intensive English.

Financial Assistance

The Department of Political Science has two types of financial assistance available to support graduate study. This includes graduate assistantships and graduate scholarships. The application deadline for all department financial assistance is March 1.

- **Graduate Scholarships & Assistantships**

- The Department of Political Science offers a number of scholarships. These vary in terms of the amount of assistance and the exact requirements of each. To view a list of available scholarships and fellowships and learn how to apply, click here!
- The Department of Political Science also provides financial assistance in the form of a graduate assistantship on a competitive basis in exchange for assistance to faculty with their teaching, research, or administrative responsibilities. Specific assignments to teaching or research depend on the needs and abilities of the graduate assistant, and the needs of the department. Assistantships must be applied for on a yearly basis. For more information and how to apply, click here!

- **Selection criteria**

- Academic performance, promise, and intellectual ability.
- Past performance as a departmental assistant, if applicable.
- Needs of the department faculty.
- Financial need.

- **Conditions of Assistantship**

Graduate assistants must enroll in a minimum of six credit hours per semester and make reasonable degree progress as reflected by at least a 3.0 GPA. During the period of appointment, assistants may not hold another paid full-time position of any kind. The department reserves the right to withdraw support at any time if academic performance falls below the 3.0 GPA, or if the job performance is not satisfactory. The assistantship is awarded for one academic year, assuming all conditions are met. A reapplication is required for each additional year of support.

- **Amount of Assistantship**

- Graduate assistantships involve a stipend, a tuition waiver for up to 10 credit hours per semester and fee reductions. The amount of the stipend changes from year-to-year and may be obtained by contacting the graduate program's Director.
- Graduate assistants are required to work a maximum of 20 hours per week in support of the research, teaching, and administrative activities of departmental faculty and staff.

- **Award Announcement**

All applicants will be notified of the department's decisions, and award recipients will be asked to acknowledge acceptance formally. Awards are announced mid-April.

Accelerated

Accelerated Political Science (BA)/Master of Public Administration (MPA)

The accelerated Accelerated Political Science (BA)/Master of Public Administration (MPA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Public Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.

- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- The program requires a total of 160 credit hours including 120 undergraduate hours and 40 graduate hours.
- However, a maximum of 9 credit hours from the graduate degree can also be counted towards the undergraduate degree, effectively reducing the total number of hours to 151.
- The 9 credit hours to be counted for both undergraduate and graduate credit must be chosen from among the "core courses" described below.
- Graduate courses must be completed with an overall GPA of at least a 3.0 GPA.
- At least 24 of the hours on the graduate program of study must be at the 700 or above level.

Course Requirements

Master of Public Administration (MPA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- POLSC 700 - Research Methods in Political Science **Credits: 3**
- POLSC 702 - Public Administration and Society **Credits: 3**
- POLSC 708 - Public Personnel Administration **Credits: 3**
- POLSC 710 - Policy Analysis and Evaluation **Credits: 3**
- POLSC 735 - Public Organization Theory **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Political Science (BA)/Security Studies (MA)

The accelerated Accelerated Political Science (BA)/Security Studies (MA) will provide high-performing undergraduates the opportunity to pursue an accelerated MA/Master of Arts in Security Studies degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process will be the same as for applicants that are seeking the stand-alone M.A. in security studies, but they will not be required to have completed their undergraduate degree. The earliest that students can submit applications for admission is at the January submission deadline during their junior year (after five semesters). A completed application requires the following materials:

- A statement of objectives
- Three letters of recommendation
- A transcript from each academic institution since high school
- A writing sample

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The program requires a total of 150 credit hours including 120 undergraduate hours and 30 graduate hours.

- However, a maximum of 9 credit hours from the graduate degree can also be counted towards the undergraduate degree, effectively reducing the total number of hours to 141.
- Graduate courses must be completed with an overall GPA of at least a 3.0 GPA.
- At least 18 of the hours on the graduate program of study must be at the 700 or above level.

Course Requirements

Security Studies (MA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- POLSC 625 - East Asian Politics **Credits: 3**
- POLSC 626 - African Politics **Credits: 3**
- POLSC 630 - Politics of Russia and the Former Soviet Union **Credits: 3**
- POLSC 642 - International Conflict **Credits: 3**
- POLSC 700 - Research Methods in Political Science **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Political Science (BS)/Master of Public Administration (MPA)

The accelerated Accelerated Political Science (BS)/Master of Public Administration (MPA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Public Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- The program requires a total of 160 credit hours including 120 undergraduate hours and 40 graduate hours.
- However, a maximum of 9 credit hours from the graduate degree can also be counted towards the undergraduate degree, effectively reducing the total number of hours to 151.
- The 9 credit hours to be counted for both undergraduate and graduate credit must be chosen from among the "core courses" described below.
- Graduate courses must be completed with an overall GPA of at least a 3.0 GPA.
- At least 24 of the hours on the graduate program of study must be at the 700 or above level.

Course Requirements

Master of Public Administration (MPA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- POLSC 700 - Research Methods in Political Science **Credits: 3**
- POLSC 702 - Public Administration and Society **Credits: 3**
- POLSC 708 - Public Personnel Administration **Credits: 3**
- POLSC 710 - Policy Analysis and Evaluation **Credits: 3**
- POLSC 735 - Public Organization Theory **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Political Science (BS)/Security Studies (MA)

The accelerated Accelerated Political Science (BS)/Security Studies (MA) will provide high-performing undergraduates the opportunity to pursue an accelerated MA/Master of Arts in Security Studies degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process will be the same as for applicants that are seeking the stand-alone M.A. in security studies, but they will not be required to have completed their undergraduate degree. The earliest that students can submit applications for admission is at the January submission deadline during their junior year (after five semesters). A completed application requires the following materials:

- A statement of objectives
- Three letters of recommendation
- A transcript from each academic institution since high school
- A writing sample

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The program requires a total of 150 credit hours including 120 undergraduate hours and 30 graduate hours.

- However, a maximum of 9 credit hours from the graduate degree can also be counted towards the undergraduate degree, effectively reducing the total number of hours to 141.
- Graduate courses must be completed with an overall GPA of at least a 3.0 GPA.
- At least 18 of the hours on the graduate program of study must be at the 700 or above level.

Course Requirements

Security Studies (MA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- POLSC 625 - East Asian Politics **Credits: 3**
- POLSC 626 - African Politics **Credits: 3**
- POLSC 630 - Politics of Russia and the Former Soviet Union **Credits: 3**
- POLSC 642 - International Conflict **Credits: 3**
- POLSC 700 - Research Methods in Political Science **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Graduate Certificate

Public Administration Graduate Certificate

Contact: James Franke

E-mail: jfranke@k-state.edu

Home Page: www.k-state.edu/polsci/

The mission of the Graduate Certificate in Public Administration is to provide a flexible professional certificate program for those who desire to pursue professional training in principles of public management in order to advance their administrative careers in the public sector and the nonprofit sector. Certificate holders will be trained for entry level management positions with government and nonprofit agencies at the federal, state, or local level, and with regional or sub-state organizations.

Students with a Graduate Certificate in Public Administration will understand the general principles of public administration, including but not limited to public sector budgeting, personnel, public organization theory, and research methods. Course work may be accomplished entirely via various distance learning technologies so that students will not need to be resident in Manhattan in order to obtain this certificate.

After obtaining the certificate, if they so desire students may apply their certificate hours towards a Master of Public Administration at Kansas State University.

The Graduate Certificate in Public Administration is offered through the Political Science graduate program.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Public Administration at Kansas State University.

Course Requirements

Students are required to take 15 hours (5 courses) of course work, 12 of which are core courses and 3 of which are elective hours.

Required Courses

The core courses are listed below. POLSC 708, POLSC 735 and POLSC 737 are required. Students may choose either POLSC 700 or POLSC 710 as their fourth core course. Whichever of the two is not chosen may be taken as an elective. 12 credit hours

- POLSC 708 - Public Personnel Administration **Credits: 3**
- POLSC 735 - Public Organization Theory **Credits: 3**
- POLSC 737 - Public Budgeting **Credits: 3**
- POLSC 700 - Research Methods in Political Science **Credits: 3**
- OR
- POLSC 710 - Policy Analysis and Evaluation **Credits: 3**

Elective Courses

Elective Courses are listed below. Students should choose one. 3 credit hours

- * POLSC 607 - Administrative Law **Credits: 3**
- * POLSC 618 - Urban Politics **Credits: 3**
- POLSC 620 - State and Local Government **Credits: 3**
- POLSC 628 - Civic Engagement **Credits: 3**
- * POLSC 700 - Research Methods in Political Science **Credits: 3**
- OR
- * POLSC 710 - Policy Analysis and Evaluation **Credits: 3**
- POLSC 711 - Administrative Ethics **Credits: 3**
- POLSC 739 - Intergovernmental Relations **Credits: 3**
- POLSC 740 - Nonprofit Financial Management **Credits: 3**
- * POLSC 785 - Readings in Political Science **Credits: 3**
- POLSC 799 - Pro-Seminar in Political Science **Credits: 3**
- * POLSC 812 - Foundations of Security Studies **Credits: 3**

** Typically available online.*

Total Hours Required for Graduate Certificate: 15

Security Studies Graduate Certificate

The graduate certificate in Security Studies is a rigorous, interdisciplinary, and professionally-oriented program of graduate studies, and is available for both on campus and distance students. The certificate provides a broad, analytical perspective on national and international security issues. Coursework concentrates on issues of strategy, politics, economics, and society from both historical and social science perspectives. A minimum of 15 credits is required.

Students currently or previously enrolled in Ft. Leavenworth's Command and General Staff College may apply to transfer up to 3 credits towards the completion of the Security Studies Graduate Certificate.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Security Studies at Kansas State University.

Admission Requirements

- Bachelor's degree

Course Requirements

Required Courses

- History Topics Courses **Credits:** *6two HIST 850- or HIST 860-level courses for 6 credit hours total*
- POLSC 812 - Foundations of Security Studies **Credits:** 3
- POLSC 813 - International Security **Credits:** 3
- POLSC 814 - Terrorism and Transnational Security Issues **Credits:** 3

Total Hours Required for Certificate: 15

Master of Public Administration

Master of Public Administration (MPA)

The Master of Public Administration (MPA) degree at Kansas State University prepares both mid and pre-career students to serve the public interest and establish themselves as civic leaders. The program emphasizes a theoretically informed and research driven skills based approach to learning designed to insure that our students develop specific competencies which prepare them for the challenges of work in the public and nonprofit sectors immediately upon graduation. Students are given a broad exposure to policy systems, political environments, administrative principals and research methods. Additionally, students are required to think critically, apply knowledge and seek practical solutions to real world problems.

Course Requirements

For pre-career students lacking significant administrative experience, the degree requires 37 hours of graduate credit including a one credit hour internship involving at least 400 hours of employment in an appropriate public or nonprofit setting. The one credit hour internship is not required of mid-career students with administrative experience. Full-time students are normally able to complete the degree in two years- four semesters plus one summer course.

The curriculum of study for the Master of Public Administration program includes core, elective and area of emphasis courses.

All core and elective courses, and most area of emphasis courses, are taught on a regular basis- once per academic year or every other academic year. Students can obtain a projection of courses to be offered over the course of their program of study.

Core Curriculum	21 credit hours
Electives	9 credit hours
Area of Emphasis	6 credit hours
Internship	1 semester hour (pre-career students only)
Total	37 semester hours (36 for mid-career students)

Required Courses: 21 Credit Hours

The core curriculum is composed of seven required courses which focus upon subject matter that any administrator needs to master and use. Students are advised to take all core courses except POLSC 831 early in their degree programs. Please note that each of these courses is only offered once per academic year.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

- POLSC 700 - Research Methods in Political Science **Credits: 3** Fall Semester
- POLSC 702 - Public Administration and Society **Credits: 3** Fall Semester
- POLSC 708 - Public Personnel Administration **Credits: 3** Fall Semester
- POLSC 738 - Public Finance **Credits: 3** Fall Semester
- POLSC 710 - Policy Analysis and Evaluation **Credits: 3** Spring Semester
- POLSC 831 - Public Administration Capstone **Credits: 3** Spring Semester
- POLSC 711 - Administrative Ethics **Credits: 3** Spring Semester
- POLSC 737 - Public Budgeting **Credits: 3** Spring Semester

Elective Courses: 9 Credit Hours

Students choose elective courses in order that their required courses, transfer credits, and electives total 37 hours. Those electives are primarily chosen from among political science and relevant program courses at the 700-level or above. Courses from other departments, and courses below 700-level, may be taken with permission of the student's advisor. For advice on electives, students should consult with the director of the Public Administration program or members of the MPA committee.

MPA Area of Emphasis: 6 Credit Hours

Each student must develop a particular emphasis. Below are several areas of emphasis which we highly recommend to our students. Students wishing to propose other emphases may do so with the advice and consent of the Director of Graduate Studies.

- Public Budgeting and Finance
- Planning
- Security Studies
- State and Local Government

MPA Internship: 1 Credit Hour

Pre-Career Students

- Pre-service students are required to complete an internship (POLSC 897). This entails serving in a full-time administrative position for a period of at least 10 weeks (400 hours) in the public sector, or in a not-for-profit agency.
- Internship positions are coordinated by the Director of Graduate Studies. Ideally the internship should occur after the second semester of full time coursework. All internships are competitive in nature and are available on a regular basis with state, county, and local governments. A student's progress in the internship is monitored by the student's immediate supervisor and by the Director of Graduate Studies.
- Please note that the internship should not be done until most of the core courses are completed

Mid-Career Students

Mid-career students with significant employment experience may have the internship requirement waived. Students who wish an internship waiver, should send a request to the Director of Graduate Studies in writing during their first year of study.

Total Hours Required for Master's: 37

Psychological Sciences

David P. Schmitt, Head

Mary E. Cain, Director of graduate studies

492 Bluemont Hall
785-532-6850
Fax: 785-532-5401
psych@k-state.edu
<http://www.k-state.edu/psych/>

Admission

For admission to graduate study, the university requires an undergraduate grade point average of B or better during the junior and senior years. As additional evidence of competence, the Department of Psychological Sciences requires the applicant to submit academic transcripts, a statement of purpose, and three letters of recommendation (preferably from faculty members at a previously attended institution). Students for whom English is not a native language will not be considered for admission unless they receive a minimum score or higher on the Test of English as a Foreign Language (550 on the paper-based test, 213 on the computer-based test, or 79 on the internet-based test). A TOEFL scores of less may require remedial English courses.

The Department of Psychological Sciences expects all applicants to have met the minimum standards for the bachelor's degree in psychology as recommended by the American Psychological Association. These include 18 semester hours of psychology, or its equivalent, in such courses as research methods, statistics, cognitive psychobiology, personality, etc. Students who wish to concentrate in behavioral neuroscience must have the necessary background in the physical and biological sciences. In some prearranged cases, deficiencies can be made up after enrollment. A detailed description of the graduate programs, as well as additional information about financial support, can be obtained from the Department of Psychological Sciences website <http://www.k-state.edu/psych>.

Performance standards

Graduate students' performance is evaluated twice each year in the domains of classroom work, research, and (when appropriate) teaching or research assistantship activities. Each faculty member who has had significant contact with a graduate student during the preceding semester completes a standard evaluation instrument. These are then made available to the student, who is encouraged to consult with faculty and discuss their evaluations. Finally, faculty meet as a group to formally assess each student's individual performance and progress toward a graduate degree.

A preliminary examination is usually taken following completion of core courses and the Master's requirements and covers the student's area of concentration and tests a high level of competence.

Financial assistance

Departmental Assistantships

Providing excellent opportunities for research experience or classroom teaching, a number of these awards are made each year on a competitive basis. Such assistantships require approximately 20 hours work a week, allow students to carry a normal load of 10 to 12 semester hours of course work a semester, and provide tuition remission and fee reductions.

Research Assistantships

These positions are comparable to departmental assistantships except they are funded out of individual staff member's grant or contract funds. The student is assigned to a particular staff member's research project, and all course loads and stipends are like those of departmental assistants.

Campus Assistantships

Students not supported by the Department of Psychological Sciences are often successful in obtaining assistantships elsewhere on campus. For example, recent graduate students have found employment in the Office of Institutional Equity, the Office of Student Life, the Office of Educational Innovation and Evaluation, the Graduate School, and the Teaching and Learning Center.

Fees and Tuition

An incidental fee and other fees for the student health center, student union, and student activities are charged. As staff members, departmental or research assistants are charged in-state fees and tuition according to the number of semester hours carried. Teaching assistants receive a partial rebate of incidental fees and total tuition remission. Fees are subject to change without notice.

Housing

The university maintains modestly priced one- and two-bedroom apartments for married student and single parents. These are located close to the central campus. Residence halls are also available. Students who wish to apply for university housing should write to Housing and Dining Services soon after they are accepted into the program.

Doctor of Philosophy

Psychology (PHD)

Graduate programs in Psychological Sciences

All doctoral candidates, regardless of special areas of interest, are expected to obtain a thorough grounding in general psychology, including theory, content, and methods. Such grounding is accomplished in part by requiring all students to take a series of basic core courses in both quantitative and substantive areas of psychology. Students who enter the program with a Master's degree may be required to do a Master's level project if, in the opinion of their advisor and at least one other faculty member in the same area, the previous thesis was not of sufficient quality or not based on empirical research.

Admission Requirements

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Required Courses

All graduate students must take at least 5 of the following 9 courses depending on their area of concentration. In general, students should take as many of these core courses as possible in their first two years in the graduate program. Requests to deviate from these guidelines due to special circumstances should be approved by the student's major advisor in consultation with the supervisory committee.

- PSYCH 885 - History and Trends in Psychology **Credits: 3**
- PSYCH 803 - Physiological Psychology **Credits: 3**
- PSYCH 804 - Industrial/Organizational Psychology **Credits: 3**
- PSYCH 810 - Learning **Credits: 3**
- PSYCH 812 - Perception **Credits: 3**
- PSYCH 814 - Advanced Cognitive Psychology **Credits: 3**
- PSYCH 816 - Psychology of Health **Credits: 3**
- PSYCH 820 - Personality Theory and Research **Credits: 3**
- PSYCH 830 - Pro-Seminar in Social Psychology **Credits: 3**

The first two years of graduate study are typically devoted to a broad survey of the major areas of psychology and the acquisition of certain basic research techniques. The first year of this period is spent primarily in basic courses. During the second year, students begin to satisfy related requirements, complete work on their Master's thesis, and begin to develop a major area of professional interest. The third and fourth years of the doctoral program constitute a period of special training during which students are occupied to an increasing extent with pursuing their special research and professional interests. Most of their time is spent in small seminars and directed study. During this time, students must pass a final written examination that covers their major areas of interest, and complete a doctoral dissertation that constitutes an original contribution to the research literature in those areas. Our graduate training includes an opportunity to gain supervised experience in teaching at the college level. The Teaching Apprenticeship Program provides both coursework on pedagogical methods and supervised experience as an instructor for an introductory level psychology course and, later, one or more of the department's core or service courses. Close interaction between the graduate student and two skilled faculty members is maintained to provide an optimum learning environment. Because most academic positions taken by our graduates involve teaching to a greater or lesser extent, this type of formal training makes our students highly competitive in the job market. Students who complete the doctoral program are eligible for a variety of teaching, research, and professional positions in colleges and universities, governmental agencies, and business and industry.

Each of the specialization programs (Behavioral Neuroscience/Animal Learning, Cognitive/Human Factors, Industrial-Organizational, and Social-Personality) has particular course requirements. Students in these programs should consult with their advisors regularly to make sure of enrolling in the appropriate classes.

Program total Credits (minimum 90 credits)

Statistics Courses

Students are required to take the following sequence of courses.

- PSYCH 802 - Psychological Research Design and Analysis I **Credits: 3**
- PSYCH 805 - Psychological Research Design and Analysis II **Credits: 3**

Following the above two courses, one of the following courses:

- PSYCH 961 - Multivariate Analyses of Behavioral Data **Credits: 3**
- PSYCH 958 - Seminar in Mathematical Models of Behavior **Credits: 1-3**

Seminar in Professional Problems

All graduate students must take the Seminar in Professional Problems:

- PSYCH 968 - Seminar in Professional Problems **Credits: 1-3**

Behavioral Neuroscience/Animal Learning Program

Our program is designed to train students broadly in experimental psychology in addition to their behavioral neuroscience specialization. While courses are an important part of training, students should expect to engage in laboratory research throughout their Master's and doctoral program. Successful degree candidates typically have broad training in the biological sciences as undergraduates.

Program Requirements

In addition to the department requirements, students in the Behavioral Neuroscience/Animal Learning program are required to complete the following core courses:

- PSYCH 803 - Physiological Psychology **Credits: 3**
- PSYCH 810 - Learning **Credits: 3**

Students are strongly encouraged to complete the following core courses:

- PSYCH 812 - Perception **Credits: 3**
- PSYCH 814 - Advanced Cognitive Psychology **Credits: 3**

Program Electives

Graduate students are encouraged to take advantage of other elective courses within the department as part of their program of study. In addition, extensive possibilities for courses outside of the department exist. Students should consult with their major advisor and supervisory committee to determine which of these courses would be most appropriate.

Cognitive/Human Factors Program

The Cognitive/Human Factors Psychology Graduate Program at Kansas State University is designed to prepare students for careers as psychologists in academia, government, and industry. The program provides students with a broad background in the research methodology used in experimental as well as many other areas of psychology. The students are expected to acquire a general knowledge of the research problems and practices of current experimental psychologists in their chosen area. Current active research areas include memory, judgment and decision making, visual perception, psycholinguistics, and applications of all of the above in various settings.

Program Requirements

- PSYCH 803 - Physiological Psychology **Credits: 3**
- PSYCH 812 - Perception **Credits: 3**
- PSYCH 814 - Advanced Cognitive Psychology **Credits: 3**

Industrial/Organizational Psychology Program

The doctoral program in Industrial and Organizational Psychology at Kansas State University prepares students for careers in consulting, private business, public agencies, and academic settings. The program was founded in the late 1950s, and has existed in its current form since 1976.

Program Requirements

These industrial and organizational psychology courses are offered on a regular basis to assure that all students are able to take them in a timely fashion.

- PSYCH 804 - Industrial/Organizational Psychology **Credits: 3**
- PSYCH 806 - Psychological Measurement **Credits: 3**
- PSYCH 878 - Industrial Psychology: Personnel Selection **Credits: 3**
- PSYCH 879 - Organizational Psychology **Credits: 3**

Program Electives

In addition to the requirements for the degree are those established by the Department of Psychological Sciences, I/O graduate students are encouraged to take advantage of other elective courses specifically related to industrial and organizational psychology as part of their program of study. The following is a list of examples and more elective courses would be available. Students should consult with their major advisor and supervisory committee to determine which of these courses would be most appropriate.

- PSYCH 875 - Industrial Psychology: Personnel Training **Credits: 3**
- PSYCH 876 - Industrial Psychology: Work Motivation **Credits: 3**
- PSYCH 877 - Industrial Psychology: Leadership **Credits: 3**
- PSYCH 960 - Seminar in Industrial Psychology **Credits: 3**

Social-Personality Program

The faculty members directly connected with the program are very diversified in their theoretical and research interests, but all are strongly committed to the training of scholar-researcher "generalists" rather than technical specialists. That is, our students are expected to acquire a broad, theoretically informed understanding of the Social-Personality field, and its articulation with other branches of psychology, as well as the various technical skills necessary for basic and applied research. As students progress through the program, their areas of particular expertise become defined by their research projects, thesis, and dissertation. Graduate students within the Social-Personality Program will consult with their major advisor to select appropriate courses to fulfill the department's core course requirement.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Psychology (MS)

Graduate programs in Psychological Sciences provide professional training leading to the master of science degree as a requirement of the Ph.D. program for students entering with a relevant bachelor's degree.

Master's training is offered in four broad areas:

- (1) behavioral neuroscience/animal learning (with concentrations in animal learning/behavior or physiological psychology/behavioral neuroscience)
- (2) cognitive/human factors psychology (with concentrations in psycholinguistics, judgment and decision making, human factors/engineering psychology, or sensation and perception)
- (3) social-personality (with concentrations in social, personality, or developmental psychology)
- (4) industrial/ organizational (with concentrations in human-resources/personnel issues and procedures, organizational behavior and theory)

At the master's level, students may specialize in any of the traditional areas. The first year of the Master's program is spent primarily in basic courses. Graduate students will also complete a first-year research project (see below). During the second year, students begin to satisfy related requirements, complete work on their master's thesis, and begin to develop a major area of professional interest.

Course Requirements

A minimum of 30 semester hours of graduate credit is required for the Psychology Master of Science degree program, of which no less than 22 hours must be earned in coursework. Coursework for the M.S. program in Psychology must include PSYCH 802, PSYCH 805, and two semesters of the one-credit seminar in Professional Problems (PSYCH 968). Details on the thesis requirement are provided below.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

14 credit hours

- PSYCH 802 - Psychological Research Design and Analysis I **Credits: 3**
- PSYCH 805 - Psychological Research Design and Analysis II **Credits: 3**
- PSYCH 899 - Master's Research in Psychology **Credits: 1-18**
- PSYCH 968 - Seminar in Professional Problems **Credits: 1-3**

The other 16 credit hours are chosen among courses approved by a student's supervisory committee and consistent with the student's chosen area of specialization. Course selection is done in consultation with and with the approval of the student's supervisory committee.

First-Year Research Project

Graduate students will complete a first-year research project that is designed in consultation with their major adviser. This research endeavor is intended to reflect the importance of establishing a productive research component of an individual's

graduate program. Early in the second year, students will present their first-year project to the department in a format similar to a national meeting of a scientific society.

Master's Thesis

Students are expected to complete a Master's thesis as part of their degree requirements in preparation for their doctorate work. Ideally, the Master's thesis should be completed by the end of the third year. Students will complete a Master's thesis prior to taking a preliminary examination and being advanced to candidacy in the doctoral program. Under limited circumstances a student may complete a non-thesis report instead of a thesis by taking 2 credits of 899 and 4 credits of approved coursework in lieu of the 6 credits of 899. The report must meet department requirements and describe research conducted by the student; the final report must be approved by the student's supervisory committee. This option is available only by means of petition of the department's Graduate Program Committee and is intended to only be used for students who cannot complete the thesis due to extenuating circumstances and who will not be continuing to the Ph. D.

Total Hours Required for Master's: 30

Distance Master's Program in Industrial/Organizational Psychology

Distinct from the on-campus graduate program area in Industrial/Organizational Psychology, there is a distance Master's program in Industrial/Organizational Psychology which does not include a thesis project. The Master of Science program in industrial/organizational psychology (MIOP) is a 38-hour sequence of on-campus and web-based courses. The program is directed at working human resource professionals and aims at teaching students to apply analytical behavioral science skill and course concepts to company related issues. The program spans 2 1/2 years. The last semester of the program consists of students conducting a research practicum in their own organization under the supervision of faculty. Students attend campus once a year over the summer for two-week sessions. Four courses are taught as on-campus courses, and the remaining four courses and practicum are delivered via web-based instruction.

Course Requirements

Required Courses

12 credit hours

- PSYCH 804 - Industrial/Organizational Psychology **Credits: 3**
- PSYCH 808 - Applied Research Methods **Credits: 3**
- PSYCH 809 - Applied Research Methods II **Credits: 3**
- PSYCH 968 - Seminar in Professional Problems **Credits: 1-3** (Ethical and Legal Issues)

Topics Courses

12 credit hours

- PSYCH 875 - Industrial Psychology: Personnel Training **Credits: 3**
- PSYCH 878 - Industrial Psychology: Personnel Selection **Credits: 3**
- PSYCH 879 - Organizational Psychology **Credits: 3**
- PSYCH 880 - Industrial Psychology: Performance Appraisal **Credits: 3**

Practicum: 14 credit hours taken across six semesters

- PSYCH 860 - Practicum in Psychology Credits: 1-18

Total Hours Required for Master's: 38

Security Studies

Michael Flynn, Director of Graduate Studies

309 Calvin Hall
785-532-3786
securstu@ksu.edu
<http://www.k-state.edu/securitystudies/>

Security Studies is an interdepartmental graduate program with faculty participants from History and Political Science.

Social Transformation Studies

Yolanda Broyles-Gonzalez, Head
Christie Launius, Associate Head

003 Leasure Hall
785-532-5738
E-mail: soctran@k-state.edu
Web address: <https://www.k-state.edu/social-transformation/>

Drawing on the interdisciplinary scholarly and pedagogical traditions of the fields of ethnic studies and gender, women, and sexuality studies, Social Transformation Studies offers students a base of knowledge and skills that will enable them to launch and sustain careers devoted to tackling some of the most pressing social issues facing Kansans, and Americans more broadly, including health disparities, food insecurity, gender violence, and racial and economic inequalities.

Social Transformation Studies offers students the opportunity to think critically about the multifaceted realities, identities, and important knowledges created by diverse peoples; develop cultural competencies that can be used in workplace settings; learn about and promote practices of inclusivity; and foster community-based engaged research and praxis responsive to the needs and realities of underserved communities.

A major in Social Transformation Studies equips students to approach issues of equity and civic engagement from a variety of perspectives and prepare them to excel in a wide range of fields, including violence prevention and advocacy, law and policy studies, health professions, the technology sector, business, and public health, as well as graduate-level studies. The Social Transformation Studies program provides students with skills that employers seek: innovation skills to create new solutions to both emerging and enduring social problems, the ability to work with and serve diverse and underserved constituencies, and critical thinking, writing and communication.

In addition to the general university and college requirements for the BA/BS degree, all Social Transformation Studies majors are required to complete 30 credit hours. All STRAN majors will complete one 3 credit introductory course (AMETH 160 or GWSS 105), 9 cr. of core courses (STRAN 400, STRAN 550, and STRAN 600), and 3 cr. of elective in either AMETH or GWSS. For the remaining 15 credits of the Social Transformation Studies major, students will choose one of two tracks: American Ethnic Studies or Gender, Women, and Sexuality Studies.

The department offers an undergraduate major, minors in American Ethnic Studies, Gender, Women, and Sexuality Studies, and Queer Studies, a certificate in Intercultural Competence, and a graduate certificate in Gender, Women, and Sexuality Studies.

Certificate

Gender, Women, and Sexuality Studies Graduate Certificate

Valerie Padilla Carroll, Interim Head

102 Leasure Hall

785-532-5738

Email: soctran@k-state.edu

Web address: <https://www.k-state.edu/social-transformation/academics/graduate/>

Anne Longmuir, Director of Graduate Certificate

Email: longmuir@ksu.edu

The Department of Social Transformation Studies offers a graduate certificate for students in M.A., M.S., Ph.D. and professional programs at Kansas State or those wishing to complete the certificate independent of another degree. It consists of 12 hours of graduate level courses in gender, women, and sexuality studies. One core course—GWSS 810 is required. Three other courses at the 600 level and above can be chosen from an approved list of electives from a variety of disciplines.

To apply to the graduate certificate program, admitted students enrolled in a master's or doctoral program at K-State should email the graduate certificate director, outlining their goals in pursuing the certificate, and copying their major professor or director of graduate studies in their degree program. Students wishing to pursue the certificate independently of another degree program at K-State should apply online through the graduate school. After they have been accepted, students should meet with the coordinator to identify the courses most congruent with their chosen program of study.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

The certificate consists of 12 hours of approved graduate level courses at the 600 level or above in gender, women, and sexuality studies.

Required Courses

- GWSS 810 - Key Concepts in Gender, Women, and Sexuality Studies **Credits: 3**

Elective Courses

Courses followed by a subtitle in parentheses vary and count toward the Gender, Women, and Sexuality Studies Graduate Certificate only when offered with the indicated subtitle. Choose 9 hours from the following list of courses:

- GWSS 605 - Social Change Field-Experience **Credits: 3**
- GWSS 610 - Capstone Seminar in Gender, Women, and Sexuality Studies **Credits: 3**
- GWSS 700 - Advanced Topics in Gender, Women, and Sexuality Studies **Credits: 1-3**
- GWSS 784 - Internship in Gender, Women, and Sexuality Studies **Credits: 1-12**
- GWSS 799 - Independent Study for Graduate Students or Advanced Undergraduate Students **Credits: 1-3**
- ANTH 710 - Writing Cultures: Ethnographic Methods **Credits: 3**
- CFT 865 - Human Sexuality **Credits: 3**

- CFT 869 - Systematic Treatment of Trauma Violence and Substance Abuse **Credits: 3**
- COMM 630 - Special Topics in Rhetoric and Communication **Credits: 3** (Gender and Communication)
- CRIM 665 - Women and Crime **Credits: 3**
- EDACE 750 - Women, Education, Leadership, and Work **Credits: 3**
- EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice **Credits: 3**
- EDCEP 830 - Diversity in Higher Education. **Credits: 3**
- EDCI 735 - Gender Implications for Education **Credits: 3**
- EDCI 886 - Seminar in Curriculum and Instruction **Credits: 1-18** (Women, Education, and Leadership)
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- ENGL 605 - Readings in Medieval Literature **Credits: 3** (Medieval Others: Dragons, Damsels, & Death, The Idea of Work in the Middle Ages)
- ENGL 625 - Readings in Eighteenth-Century British Literature **Credits: 3**
(Austen, Readings in 18th Century Women, Restoration Drama, or Ghosts and Goths)
- ENGL 630 - Readings in Nineteenth-Century British Literature **Credits: 3** (Victorian Childhoods)
- ENGL 635 - Readings in Twentieth-and Twenty-First Century British Literature **Credits: 3**
(Bloomsbury Group)
- ENGL 650 - Readings in Twentieth- and Twenty-First-Century American Literature **Credits: 3**
(Queer Native Literatures or Dream Acts)
- ENGL 655 - Readings in American Ethnic Literature **Credits: 3**
(What is African American Literature? or Dream Acts: Immigration in Ethnic Literature)
- ENGL 660 - Readings in Major Authors **Credits: 3**
(The Brontes, Gender and Performance, George Eliot, Louise Erdrich and Sherman Alexie, Shakespeare, Austen and Her Legacy, Whitman and Dickinson, American Indian Literatures, American Gothic, or Louise Erdrich)
- ENGL 670 - Topics in British Literature **Credits: 3** (18th Century British Women Writers, Downton Abbey in Context)
- ENGL 680 - Topics in American Literature **Credits: 3**
(In the Shadows of American Literature, Latino/a Literature, or Asian American Literature, or Two-Spirit Literature)
- ENGL 695 - Topics in Literature **Credits: 3**
(African American Children's Literature, Innocence and Experience, or Postcolonial Literature)
- ENGL 705 - Theories of Cultural Studies **Credits: 3**
- ENGL 710 - Studies in a Literary Genre **Credits: 3**
(Back to the Future) (Gender and Sexuality in American Indian Literature, Romances and Saints' Lives)
- ENGL 720 - Studies in a Major Author **Credits: 3**
(The Brontes, Drama, Shakespeare, or Extreme Shakespeare)
- ENGL 725 - Studies in Children's/Young Adult Literature **Credits: 3**
(African American Children's Literature)
- ENGL 730 - Studies in a Literary Period **Credits: 3**
(Alcott and Twain or Global Middle Ages)
- ENGL 740 - Studies in Literary Theory **Credits: 3**
(African American Literary Theory)
- ENGL 745 - Cultural Studies **Credits: 3** (Queer Cinema in Context)
- ENGL 745 - Cultural Studies **Credits: 3** (Welcome to Apocalypse)
- ENGL 755 - Studies in Composition and Rhetoric **Credits: 3**
(Power and Persuasion)
- ENGL 825 - Seminar in Literature **Credits: 3**
(Golden Age of Children's Literature, Medieval Endings, Harry Potter and Literary History, Econ/Vict. Lit)
- ENGL 830 - Seminar in Cultural Studies **Credits: 3**
(Affect Theory, Queer Native Literature, American Feminisms, US Latino Studies, Victorian Women Writers, or Literature of Mad Men)

- ENGL 840 - Seminar in Composition and Rhetoric **Credits: 3**
(Maverick Rhetorics)
- FREN 716 - Topics in Contemporary French Literature **Credits: 3** (Colette)
- GRMN 701 - Topics in Eighteenth Century German Literature and Culture **Credits: 3**
(Judaism in Germany)
- GRMN 705 - Topics in Twentieth and Twenty-First Century German Literature and Culture **Credits: 3** (The Graphic Novel and Postmemory)
- HIST 984 - Topics in American History **Credits: 1-3**
(Gender in American History, or Gender and Sexuality in the United States)
- MC 612 - Diversity in Media **Credits: 3**
- POLSC 606 - Gender and Politics **Credits: 3**
- POLSC 799 - Pro-Seminar in Political Science **Credits: 3**
(Women and Law)
- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 670 - Diversity and Social Interaction in the Workplace **Credits: 3**
- SOCIO 833 - Gender Differentiation and Inequality **Credits: 3**
- SOCIO 933 - Gender and Society **Credits: 3**
- THTRE 782 - Women in Theatre **Credits: 3**

Note

Other appropriate graduate level Topics and Readings courses are offered every year in a variety of disciplines. Thus, students have a large selection of classes to choose from each year.

Total Hours Required for Graduate Certificate: 12

Sociology, Anthropology, and Social Work

Don Kurtz, Department Head

Travis Linnemann, Director of Graduate Studies

204 Waters Hall

785-532-6865

socansw@k-state.edu

<http://www.ksu.edu/sasw/>

Overview

The primary objective of the graduate program in sociology at Kansas State University is to provide the highest quality graduate training possible for students seeking to become teachers and scholars in the field of sociology or those seeking to enter careers in applied research in government or private industry. The program offers a small student/faculty ratio. Graduate students have a high level of contact with faculty and are provided with the opportunity to participate in supervised research.

The master's program provides in-depth exposure to sociological theory and methods of research, while providing flexibility in allowing students to design a program to meet their specific needs. It is intended for both students who are seeking to continue on for the Ph.D., and those seeking careers in government, business, or non-profit organizations.

The Ph.D. program offers specialized training in four areas: Community, Agriculture, Food, and Environment; Politics and Development; Criminology; and Social Inequalities. All students take core courses in sociological theory and research methods. Graduates will be prepared for academic careers in teaching and research and careers in applied social research.

Facilities

In addition to the university's computing center, the department has two graduate student computer lab's with direct access to the university mainframe. The computers contain data analysis software, word processing, spreadsheet, and data base management systems.

The department is active in interdisciplinary programs such as Women's Studies, Gerontology, American Ethnic Studies and International Studies.

Degree programs

The Master's of Arts degree requires a minimum of 30 graduate credit hours and normally takes two years to complete. It is offered under three degree options. The thesis option is designed primarily for students continuing on for a Ph.D. in sociology, or seeking a career in sociology. The non-thesis option is designed to provide general sociological knowledge for students seeking careers in government, business, or non-profit organizations. The Master's in Social Analysis option is designed to provide advanced research and analytical skills for students already employed, or those seeking careers in government, business, or non-profit organizations.

The Ph.D. degree requires a minimum of 60 credit hours beyond the Master's: 30 hours of course work and 30 dissertation hours. The course work includes 15 hours of core requirements and 18 hours in two major areas of concentration. Some core requirements can be met at the Master's level. All students must take two preliminary examinations. Preliminary examinations in their theory and methods core are waived if performance in the required courses is sufficient.

Admissions

Official transcripts from each college or university attended are required, as are a statement of purpose, curriculum vitae, three letters of reference, and a sample of previously written scholarly work. For international applications, TOEFL/IELTS scores and a financial affidavit are also required.

The general application deadline for the Fall semester is January 15 for domestic applicants and January 8 for international applicants. Applicants will receive notification about admittance in March. Notification about financial assistance (if requested) is usually sent out in early April.

Applications without financial support are considered if received before May 1 (for Fall admissions) and October 1 (for Spring admissions) for domestic applicants. August 1st is the deadline for Spring admissions for international students.

Assistantships

Teaching and research assistantships are available each year. They require approximately 16 hours of work per week. All assistants must be enrolled in a minimum of 6 hours of course work per semester, which can include hours for thesis or dissertation research.

Students awarded assistantships who make normal degree progress can expect to receive support for two years at the M.A. level and three years at the Ph.D. level, which is contingent upon university funding.

Proseminar

All entering graduate students are required to enroll in the departmental proseminar during their first fall semester on campus. The proseminar is conducted by the graduate director and consists of discussions designed to orient the graduate student to the discipline of sociology as a profession and to the department.

Graduate Handbook

Details of the procedures, deadlines, and policies of the department and the graduate school on all matters pertaining to graduate study in Sociology are available on the department's website.

Accelerated

Accelerated Sociology (BA)/Sociology (MA)

The accelerated Accelerated Sociology (BA)/Sociology (MA) will provide high-performing undergraduates the opportunity to pursue an accelerated MA/Master of Arts in Sociology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Students should apply to the program by their junior year. Applications should include the following:

- A completed on-line application to the K-State Graduate School with paid application fee.
- A statement of objectives indicating professional goals relative to the M.A. degree.
- Three letters of recommendation; at least two of them must be from KSU Sociology faculty who are familiar with the student's ability.
- Official transcript(s) of all undergraduate course work completed at the time of application.
- A sample of written work (e.g. research paper, essay).

Applications are evaluated by the Graduate Admissions Committee, which will provide a recommendation to the Director of Graduate Studies about an applicant's suitability for the program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The bachelor's degree normally requires 120 undergraduate credit hours and the M.A. degree 30 graduate credit hours. However, a maximum of 9 credit hours of graduate courses may be counted toward both the undergraduate and graduate degrees.

- Student must have completed a minimum of 75 credit hours toward the bachelor degree at time of application for admission to the accelerated program.
- Graduate courses must be completed with a minimum GPA of 3.0.
- The bachelor's degree may be awarded at any time following the completion of the undergraduate degree requirements. Alternatively, the B.A./B.S. degree and the M.A. may be awarded concurrently following the completion of the M.A. degree.
- Students must choose one of four options in the M.A. program – Sociology, Sociology-CAFE, Sociology-Social Inequalities, Criminology.

Please contact Gabriel Bachura gbachura@ksu.edu for further details about requirements and opportunities related to the accelerated B.A./M.A. program.

Course Requirements

Sociology (MA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 618 - Religion in Culture **Credits: 3**
- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 738 - International Migration **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Sociology (BS)/Sociology (MA)

The accelerated Accelerated Sociology (BS)/Sociology (MA) will provide high-performing undergraduates the opportunity to pursue an accelerated MA/Master of Arts in Sociology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Students should apply to the program by their junior year. Applications should include the following:

- A completed on-line application to the K-State Graduate School with paid application fee.
- A statement of objectives indicating professional goals relative to the M.A. degree.

- Three letters of recommendation; at least two of them must be from KSU Sociology faculty who are familiar with the student's ability.
- Official transcript(s) of all undergraduate course work completed at the time of application.
- A sample of written work (e.g. research paper, essay).

Applications are evaluated by the Graduate Admissions Committee, which will provide a recommendation to the Director of Graduate Studies about an applicant's suitability for the program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The bachelor's degree normally requires 120 undergraduate credit hours and the M.A. degree 30 graduate credit hours. However, a maximum of 9 credit hours of graduate courses may be counted toward both the undergraduate and graduate degrees.

- Student must have completed a minimum of 75 credit hours toward the bachelor degree at time of application for admission to the accelerated program.
- Graduate courses must be completed with a minimum GPA of 3.0.
- The bachelor's degree may be awarded at any time following the completion of the undergraduate degree requirements. Alternatively, the B.A./B.S. degree and the M.A. may be awarded concurrently following the completion of the M.A. degree.
- Students must choose one of four options in the M.A. program – Sociology, Sociology-CAFE, Sociology-Social Inequalities, Criminology.

Please contact Gabriel Bachura gbachura@ksu.edu for further details about requirements and opportunities related to the accelerated B.A./M.A. program.

Course Requirements

Sociology (MA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 618 - Religion in Culture **Credits: 3**
- SOCIO 633 - Gender, Power, and Development **Credits: 3**

- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 738 - International Migration **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Sociology (PHD)

The Ph.D. program offers specialized training in four core areas: (1) Community, Agriculture, Food, and Environment (CAFE); (2) Politics and Development; (3) Criminology; and (4) Social Inequalities. All students take core courses in sociological theory and research methods. Graduates will be prepared for academic careers in teaching and research as well as careers in applied social research.

Full details about the Ph.D. Program and its requirements are available in the Sociology Graduate Handbook and the Graduate School Student Handbook.

Admission Requirements

Ph.D. applicants must have completed a master's degree by the time of entry into the Ph.D. program and must have earned a grade point average equivalent to B or above. A student's preparation should include courses in Sociological Theory, Methods of Research, and Statistical Methods.

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Dissertation Requirements

After successfully completing comprehensive exams in two concentration areas, students must enroll in 6 credit hours of dissertation research per semester, excluding summer semester, until the dissertation is complete or 18 credit hours are completed. After 18 credit hours of dissertation are completed, a student must enroll in 1 hour per semester, excluding summer semester, until the dissertation is completed.

See the Sociology Graduate Handbook and the Graduate Student Handbook for additional details about program and dissertation requirements.

Course Requirements

Students must complete a minimum of 60 credit hours of Ph.D. work beyond the master's degree: 30 hours of coursework and 30 hours of dissertation research.

- Students who completed their M.A. in Sociology at K-State are not required to re-take theory and methods courses that were part of the M.A. program, though they are still required to complete 30 hours of coursework. Any courses that

were counted on the M.A. program of study cannot also be counted on the Ph.D. program of study. Please see the Graduate School Handbook for more information.

- All Ph.D. students must take preliminary examinations in two areas of concentration. Each area of concentration requires 9 credit hours of concentration courses. Courses counted toward one concentration area must be different than those counted toward the second area. Up to 6 hours of M.A. work may count toward each of the Ph.D. areas of concentration, but they cannot be counted in the Program of Study for the Ph.D.

Required Courses:

- SOCIO 801 - Introductory Proseminar **Credits: 1**
-for students who did not complete their M.A. degree at Kansas State University
- SOCIO 809 - Classical Social Theory **Credits: 3**
- SOCIO 810 - Contemporary Sociological Theory **Credits: 3**
- SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**
- SOCIO 825 - Quantitative Methods **Credits: 3**

One additional methods courses from among the following:

- SOCIO 822 - Introduction to Methods of Social Analysis **Credits: 3**
- SOCIO 824 - Qualitative Methodology **Credits: 3**
- SOCIO 923 - Methods of Social Policy Research **Credits: 3**
- SOCIO 925 - Specialized Approaches to Sociological Research **Credits: 3**
- SOCIO 931 - Seminar in Demographic Methods **Credits: 3**

Concentration Courses:

Community, Agriculture, Food, and Environment (CAFE)

- SOCIO 830 - Social Demography **Credits: 3**
- SOCIO 831 - Sociology of Agriculture **Credits: 3**
- SOCIO 832 - Sociology of Community **Credits: 3**
- SOCIO 835 - Environment and Society **Credits: 3**
- SOCIO 842 - Technology and Society **Credits: 3**
- SOCIO 851 - Sociology of Development **Credits: 3**
- SOCIO 853 - International Development **Credits: 3**
- SOCIO 934 - Sociology of Rural Development **Credits: 3**
- SOCIO 935 - Seminar in Demography **Credits: 3**
- SOCIO 951 - Political Sociology **Credits: 3**

Politics and Development

- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 738 - International Migration **Credits: 3**
- SOCIO 833 - Gender Differentiation and Inequality **Credits: 3**
- SOCIO 850 - Criminal Justice in Context **Credits: 3**
- SOCIO 880 - Social Movements **Credits: 3**
- SOCIO 935 - Seminar in Demography **Credits: 3**
- SOCIO 951 - Political Sociology **Credits: 3**
- SOCIO 953 - States and Civil Society **Credits: 3**

Criminology

- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 850 - Criminal Justice in Context **Credits: 3**
- SOCIO 861 - Sociology of Deviance **Credits: 1**
- SOCIO 862 - Criminological Theory **Credits: 3**
- SOCIO 962 - Topics Seminar in Criminology/Deviance **Credits: 3**

Social Inequalities

- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 640 - Sociology of the Family **Credits: 3**
- SOCIO 643 - Sociology of Religion **Credits: 3**
- SOCIO 738 - International Migration **Credits: 3**
- SOCIO 833 - Gender Differentiation and Inequality **Credits: 3**
- SOCIO 838 - Sociology of Culture **Credits: 3**
- SOCIO 841 - Social Stratification **Credits: 3**
- SOCIO 933 - Gender and Society **Credits: 3**

Research:

- SOCIO 999 - PhD Dissertation Research **Credits: 1-18**

Program Total Hours: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Master of Arts

Sociology (MA)

The Master of Arts degree normally requires two years of full-time work for completion. The master's program offers three degree options and provides flexibility in designing a curriculum to meet a student's needs. The thesis option is designed primarily for students continuing on for a Ph.D. in sociology, or seeking a career in sociology. The master's in social analysis option is designed to provide advanced research and analytical skills for students already employed, or those seeking careers in government, business, or non-profit organizations. The non-thesis option is designed to provide general sociological knowledge for students seeking careers in government, business, or non-profit organizations. Each of these options requires a minimum of 30 credit hours.

Full details about the M.A. Program and its requirements are available in the Sociology Graduate Handbook and the Graduate School Student Handbook.

Admission Requirements

Applicants to the M.A. Program must have graduated with a bachelor's degree from an institution whose requirements are equivalent to those of Kansas State University. M.A. applicants must have earned an undergraduate grade point average equivalent to B or above.

Thesis Option

Students interested in researching and writing a master's thesis should consult with their major professor and supervisory committee to identify a topic. Once the topic has been determined, the student writes and defends a proposal describing the research project. Once the proposal is approved, the student completes the research project described in the proposal. The student researches, writes, and defends the thesis. Full details about the thesis option are available in the Sociology Graduate Handbook and the Graduate School Student Handbook.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Course Requirements

Required Courses

- Seminar**
 - SOCIO 801 - Introductory Proseminar **Credits: 1**
- Theory Requirements**
 - SOCIO 809 - Classical Social Theory **Credits: 3**
 - SOCIO 810 - Contemporary Sociological Theory **Credits: 3**
- Methods Requirements**
 - SOCIO 822 - Introduction to Methods of Social Analysis **Credits: 3**
 - SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**

Substantive Course Requirements:

Students must complete 12 hours of substantive course work at the 700 level or above. With the permission of a student's advisor, one 600 level sociology course (3 hours) may be substituted for one of the substantive sociology courses at the 700 level or above. Students must enroll only in sociology courses during their first semester in the program, unless given explicit, prior permission by the graduate director to take other courses. Those interested in Criminology are strongly encouraged to take SOCIO 862, Criminological Theory, as part of their substantive course work hours during their M.A. program.

- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 618 - Religion in Culture **Credits: 3**
- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 640 - Sociology of the Family **Credits: 3**
- SOCIO 643 - Sociology of Religion **Credits: 3**
- SOCIO 645 - Post-Communist Societies **Credits: 3**
- SOCIO 647 - Sociology of Work **Credits: 3**
- SOCIO 670 - Diversity and Social Interaction in the Workplace **Credits: 3**
- SOCIO 701 - Problems in Sociology **Credits: 1-18**
- SOCIO 738 - International Migration **Credits: 3**
- SOCIO 742 - Society and Change in South Asia **Credits: 3**

- SOCIO 824 - Qualitative Methodology Credits: 3
- SOCIO 825 - Quantitative Methods Credits: 3
- SOCIO 830 - Social Demography Credits: 3
- SOCIO 831 - Sociology of Agriculture Credits: 3
- SOCIO 832 - Sociology of Community Credits: 3
- SOCIO 833 - Gender Differentiation and Inequality Credits: 3
- SOCIO 835 - Environment and Society Credits: 3
- SOCIO 838 - Sociology of Culture Credits: 3
- SOCIO 840 - Comparative Social Systems Credits: 3
- SOCIO 841 - Social Stratification Credits: 3
- SOCIO 842 - Technology and Society Credits: 3
- SOCIO 850 - Criminal Justice in Context Credits: 3
- SOCIO 851 - Sociology of Development Credits: 3
- SOCIO 853 - International Development Credits: 3
- SOCIO 861 - Sociology of Deviance Credits: 1
- SOCIO 862 - Criminological Theory Credits: 3
- SOCIO 880 - Social Movements Credits: 3

Thesis Research Hours:

Students must enroll for a minimum of 6 hours of SOCIO 899 and successfully complete a master's thesis under the direction of their major professor.

- SOCIO 899 - Master's Thesis Research Credits: 1-18 (6+)

Master's in Social Analysis Option

The master's in social analysis option is designed to enhance career opportunities for M.A. students who wish to go into applied professional fields, specialize in social analysis and program evaluation, and/or focus on organizational dynamics. The MSA option differs from the thesis and non-thesis options in two key ways: (a) the MSA option requires a greater number of credit hours in research methods (12 hours compared to 6); and (b) offers the option of a field practicum in social analysis which will allow students to earn credit hours while employed, or placed in an internship at an approved agency, organization, or firm.

Students enrolled in the MSA option must take 6 credit hours of SOCIO 897 Practicum in Social Analysis and must complete the Social Analysis Research Project. In taking the practicum, students must complete an on-site, learning experience in a professional organizational environment consisting of a minimum of 200 service hours. Students who are employed may substitute their work experience for the 200 hour practicum, pending approval from the student's major professor.

Students taking the practicum in lieu of the M.A. thesis or M.A. comprehensive exam must complete a Social Analysis Research Project. The requirements for this research project will be developed in consultation with the student's major professor and must be approved by members of the student's advisory committee. The end product will be a research paper developed from the on-site learning experience. Once the paper is completed, it must be evaluated as satisfactory by the student's supervisory committee.

Any student enrolled in the MSA option and writing an M.A. thesis or taking the M.A. comprehensive exam may also take SOCIO 897 Practicum in Social Analysis for 3 hours credit as an elective course. Students taking the SOCIO 897 for 3 hours credit must complete the requirements for the on-site learning experience (pre-proposal agreement, onsite hours, Practicum Evaluation Report, and seminar participation), but are not required to complete the Social Analysis Research Project.

Full details about MSA requirements are available in the Sociology Graduate Handbook and the Graduate School Student Handbook.

Course Requirements

Required Courses

Seminar

- SOCIO 801 - Introductory Proseminar **Credits: 1**

Theory Requirements

- SOCIO 809 - Classical Social Theory **Credits: 3**
- SOCIO 810 - Contemporary Sociological Theory **Credits: 3**

Methods Requirements (4 of the following 5 courses are required)

- SOCIO 822 - Introduction to Methods of Social Analysis **Credits: 3**
- SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**
- SOCIO 824 - Qualitative Methodology **Credits: 3**
- SOCIO 825 - Quantitative Methods **Credits: 3**
- SOCIO 923 - Methods of Social Policy Research **Credits: 3**

Substantive Course Requirements:

Students must complete 6-12 hours of substantive course work. This must include two sociology courses (6 hours) at the 700 level or above. One 600 level sociology course (3 hours) may be substituted for one sociology course at the 700 level or above with the permission of a student's advisor. In meeting the substantive requirement, students can select one of four options:

A) 12 hours of substantive courses plus the M.A. comprehensive exam. The 12 hours of substantive courses could include: (a) 9 hours of course work corresponding to an area of concentration and a 3 hour elective course (see the Sociology Graduate Handbook for details about areas of concentration); or (b) 12 hours of elective courses. A student taking this option will take the M.A. comprehensive examination according to the guidelines described under the non-thesis option.

B) 6 hours of elective courses plus an M.A. thesis (which requires a minimum of 6 hours of SOCIO 899). Students following this option will write an M.A. thesis according to the guidelines described under the thesis option.

C) 6 hours of elective courses plus 6 hours of SOCIO 897 Practicum in Social Analysis.

D) 9 hours of course work corresponding to an area of concentration (see areas of concentration listed under Ph.D. program below), plus 6 hours of SOCIO 897 Practicum in Social Analysis.

Students enrolled in the MSA option who do not wish to fulfill the substantive requirement by writing an M.A. thesis, or taking the M.A. comprehensive examination (options A & B above), may complete the M.A. degree requirements by taking the Practicum in Social Analysis (option C or D). Students selecting either of these options must take 6 credit hours of SOCIO 897 Practicum in Social Analysis and must complete the Social Analysis Research Project. In taking the practicum, students must complete an on-site, learning experience in a professional organizational environment consisting of a minimum of 200 service hours. Students who are employed may substitute their work experience for the 200 hour practicum, pending approval from the student's major professor.

- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 618 - Religion in Culture **Credits: 3**
- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 640 - Sociology of the Family **Credits: 3**
- SOCIO 643 - Sociology of Religion **Credits: 3**
- SOCIO 645 - Post-Communist Societies **Credits: 3**
- SOCIO 647 - Sociology of Work **Credits: 3**

- SOCIO 670 - Diversity and Social Interaction in the Workplace **Credits: 3**
- SOCIO 701 - Problems in Sociology **Credits: 1-18**
- SOCIO 738 - International Migration **Credits: 3**
- SOCIO 742 - Society and Change in South Asia **Credits: 3**
- SOCIO 824 - Qualitative Methodology **Credits: 3**
- SOCIO 825 - Quantitative Methods **Credits: 3**
- SOCIO 830 - Social Demography **Credits: 3**
- SOCIO 831 - Sociology of Agriculture **Credits: 3**
- SOCIO 832 - Sociology of Community **Credits: 3**
- SOCIO 833 - Gender Differentiation and Inequality **Credits: 3**
- SOCIO 835 - Environment and Society **Credits: 3**
- SOCIO 838 - Sociology of Culture **Credits: 3**
- SOCIO 840 - Comparative Social Systems **Credits: 3**
- SOCIO 841 - Social Stratification **Credits: 3**
- SOCIO 842 - Technology and Society **Credits: 3**
- SOCIO 850 - Criminal Justice in Context **Credits: 3**
- SOCIO 851 - Sociology of Development **Credits: 3**
- SOCIO 853 - International Development **Credits: 3**
- SOCIO 861 - Sociology of Deviance **Credits: 1**
- SOCIO 862 - Criminological Theory **Credits: 3**
- SOCIO 880 - Social Movements **Credits: 3**

Practicum or Thesis Research Hour Requirements

- SOCIO 897 - Practicum in Social Analysis **Credits: 3-6 (6)**
- SOCIO 898 - Master's Report Research **Credits: 1-18 (6+)**

Non-Thesis Option

Students pursuing the non-thesis option take the M.A. Comprehensive Examination. The M.A. Comprehensive Examination consists of three parts: (1) Theory; (2) Methods; and (3) one additional area of the student's choice. The area examination may be taken in one of the following specialty areas: Community, Agriculture, Food, and Environment (CAFE); Politics and Development; Criminology; Social Inequalities; or some other area approved by the student's major professor and supervisory committee. Full details about non-thesis M.A. requirements are available in the Sociology Graduate Handbook and the Graduate School Student Handbook.

Course Requirements

Required Courses

Seminar

- SOCIO 801 - Introductory Proseminar **Credits: 1**

Theory Requirements

- SOCIO 809 - Classical Social Theory **Credits: 3**
- SOCIO 810 - Contemporary Sociological Theory **Credits: 3**

Methods Requirements

- SOCIO 822 - Introduction to Methods of Social Analysis **Credits: 3**

- SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**

Substantive Course Requirements:

Students must complete 12 hours of substantive course work at the 700 level or above. With the permission of a student's advisor, one 600 level sociology course (3 hours) may be substituted for one of the substantive sociology courses at the 700 level or above. Students must enroll only in sociology courses during their first semester in the program, unless given explicit, prior permission by the graduate director to take other courses.

- CRIM 665 - Women and Crime **Credits: 3**
- SOCIO 618 - Religion in Culture **Credits: 3**
- SOCIO 633 - Gender, Power, and Development **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 640 - Sociology of the Family **Credits: 3**
- SOCIO 643 - Sociology of Religion **Credits: 3**
- SOCIO 645 - Post-Communist Societies **Credits: 3**
- SOCIO 647 - Sociology of Work **Credits: 3**
- SOCIO 670 - Diversity and Social Interaction in the Workplace **Credits: 3**
- SOCIO 701 - Problems in Sociology **Credits: 1-18**
- SOCIO 738 - International Migration **Credits: 3**
- SOCIO 742 - Society and Change in South Asia **Credits: 3**
- SOCIO 824 - Qualitative Methodology **Credits: 3**
- SOCIO 825 - Quantitative Methods **Credits: 3**
- SOCIO 830 - Social Demography **Credits: 3**
- SOCIO 831 - Sociology of Agriculture **Credits: 3**
- SOCIO 832 - Sociology of Community **Credits: 3**
- SOCIO 833 - Gender Differentiation and Inequality **Credits: 3**
- SOCIO 835 - Environment and Society **Credits: 3**
- SOCIO 838 - Sociology of Culture **Credits: 3**
- SOCIO 840 - Comparative Social Systems **Credits: 3**
- SOCIO 841 - Social Stratification **Credits: 3**
- SOCIO 842 - Technology and Society **Credits: 3**
- SOCIO 850 - Criminal Justice in Context **Credits: 3**
- SOCIO 851 - Sociology of Development **Credits: 3**
- SOCIO 853 - International Development **Credits: 3**
- SOCIO 861 - Sociology of Deviance **Credits: 1**
- SOCIO 862 - Criminological Theory **Credits: 3**
- SOCIO 880 - Social Movements **Credits: 3**

Directed Study Requirements (6 hours):

This requirement may be met through taking one independent study (SOCIO 701) and one additional elective at the 700 level or above

Total Hours Required for Master's: 30

Statistics

Perla E. Reyes, Head

Juan Du, Director of Graduate Studies

Trevor Hefley, Director of Graduate Studies

101 Dickens Hall

785-532-6883

gradrec@ksu.edu

<http://www.ksu.edu/stats/>

Statistics is a science which combines ideas from classical and modern mathematics, probability theory, inductive reasoning, and computer science to develop tools for extracting critical insights from data. It is a dynamic and continuously evolving discipline driven by scientific and technological breakthroughs that both increase the complexity and volume of available data. Statistical analysis plays a central role in all disciplines that make evidence-based decisions, including machine learning and artificial intelligence, and the demand for skilled statisticians and data scientists continues to grow rapidly. Today, statisticians and data scientists are partners in most scientific and technological enterprises.

Careers

"The best thing about being a statistician is that you get to play in everyone's backyard." - John Tukey

There are a wide variety of career opportunities for a professional statistician. Nearly every field that collects and stores data—including the natural and physical sciences, medicine, engineering, sports, and education—employs statisticians. Subject experts have sought statisticians to help solve a broad range of problems, including detecting changes in the environment, developing new vaccines, improving product reliability, increasing crop yield, calculating insurance risks, scouting football players, building and testing artificial intelligence solutions, and developing recommendation systems. Statistics is a field in which experts have virtually unlimited opportunities.

While many statisticians opt to work in private industry, employment opportunities abound in other sectors as well. Many state and federal government agencies—not just the Bureau of Labor Statistics and the Bureau of the Census—employ large teams of statisticians. Universities have faculty openings for statisticians within many academic departments—not just statistics, including data science, public health, mathematics, management sciences, economics, political science, genetics, history, and psychology, and often hire additional statisticians to provide administrative and research support. Finally, private consulting can be lucrative for the experienced statistician who desires to work with both private industry and government. Organizations of all sizes rely on statisticians to extract insights and draw actionable conclusions from their data.

Preparation

The Department of Statistics accepts students with a strong quantitative background. The graduate programs welcome students from many different disciplines. Students entering the M. S. program should have a background of calculus, matrix algebra, computer programming, and introductory statistics. Students entering the Ph.D. program should have additional course work in statistics and mathematics.

Degree Programs

The Department of Statistics offers four-degree programs: B.S. in statistics, a concurrent B.S./M.S. in statistics, M.S. in statistics (Mathematical Statistics Track or Data Science and Analytics Track), and Ph.D. in statistics. A master's degree is recommended for a career in industry or government. The Ph.D. degree is usually required for post-secondary teaching and

higher-level positions. The department offers concentrations in applied, computational, and mathematical probability and statistics.

Graduate Certificate in Applied Statistics

The department offers the Graduate Certificate in Applied Statistics to recognize the preparation and proficiency of non-majors in data analysis in a wide variety of subject matter areas. Graduate students in a variety of academic disciplines are conducting research that requires knowledge in applied statistics. Such students may wish to demonstrate proficiency in applied statistics as it may be useful when looking for meaningful employment opportunities, in addition to helping them become better researchers in their chosen fields. In order to strengthen their educational programs and the quality of graduate education, a Graduate Certificate in Applied Statistics has been developed.

Consulting opportunities

The department does a tremendous amount of consulting work for researchers and students on campus and for individuals and agencies off campus. Projects vary in length of time and sophistication of methods needed to complete them. Students may contact the department head to find out what is available. Those who wish to do consulting will be assigned a faculty member to direct the work. At the student's discretion, up to 2 hours credit may be earned for consulting by registering for STAT 945.

Accelerated

Accelerated Statistics and Data Science (BS)/Statistics (MS)

The Accelerated Statistics and Data Science (BS)/Statistics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Science in Statistics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process will be the same as for the traditional MS degree except completion of the BS degree is not required. The following steps are required:

- Fill out the online KSU graduate application. Required supporting documents should be uploaded to the online application as requested in the application.
- All supplemental documents required by the Statistics Department (e.g., statement of objectives, scanned copies of transcripts, letters of recommendation) will be requested as the on-line application is completed.
- A copy of an applicant's statement of objectives is to be uploaded. A written personal statement of academic objectives, giving specific reasons for the selection of the discipline of Statistics for study, contemplated research areas and professional plans. In addition, the statement can also mention one or more KSU faculty with whom the applicant has an interest in working.
- An electronic copy (PDF preferred) of applicant's transcript(s) from each college or university where applicant completed any undergraduate coursework and completed any post-baccalaureate course work or degrees is to be uploaded.
- Provide three references. Recommenders will upload their letters of recommendation directly to the applicant's application.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- Students must have completed MATH 220, MATH 221, MATH 222, STAT 225, STAT 240 or STAT 250 (or higher), STAT 341 or STAT 351, STAT 610, and one additional STAT course at the 500-level or higher, either at K-State or by transfer credit. Students may use STAT 510 instead of STAT 610 with special permission from the Director of Graduate Studies of the Statistics department.
- Minimum standards to apply to the accelerated program are a cumulative GPA of 3.00 and a GPA of 3.25 in the STAT/MATH Core (above) courses, with a recommended GPA of 3.5 or higher in STAT/MATH for successful admission. Retention in the program requires maintenance of a 3.00 GPA in both undergraduate and graduate coursework.

Course Requirements

Statistics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- STAT 713 - Applied Linear Statistical Models **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**
- STAT 722 - Experimental Design for Product Development and Quality Improvement **Credits: 3**
- STAT 730 - Multivariate Statistical Methods **Credits: 3**
- STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Statistics (PHD)

Statistics (PhD)

Admission Requirements

All doctoral students should have a background in certain mathematical topics usually presented in advanced calculus, and matrix or linear algebra courses. At K-State, these would be MATH 515, MATH 551, MATH 633, and MATH 634. Students who do not have this background upon entering the PhD program should discuss with their major professor, provisional advisor, or graduate program directors the best way to quickly acquire this background after entering the program.

Students are required to have 90 semester hours of course work and research credit.

- A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.
- The remaining credit hours may include the courses required below, elective courses approved by the student's major professor in consultation with the student's graduate committee, and research credits.
- Elective courses may be selected from courses offered by the Department of Statistics or by other disciplines.

Course Requirements

Required Courses

All doctoral students are required to include the following courses in their programs of study.

- STAT 842 - Probability for Statistical Inference **Credits: 3**
- STAT 843 - Statistical Inference **Credits: 3**
- STAT 860 - Linear Models I **Credits: 3**
- STAT 861 - Linear Models II **Credits: 3**
- STAT 870 - Analysis of Messy Data **Credits: 3**

and at least 7 credit hours of 900 level Statistics classes selected from:

- STAT 903 - Statistical Methods for Spatial Data **Credits: 3**
- STAT 904 - Resampling Methods **Credits: 3**
- STAT 905 - High-Dimensional Data and Statistical Learning **Credits: 3**
- STAT 907 - Bayesian Statistical Inference **Credits: 3**
- STAT 940 - Advanced Statistical Methods **Credits: 3**
- STAT 941 - Advanced Statistical Inference **Credits: 3**
- STAT 945 - Problems in Statistical Consulting **Credits: 1-3**
- STAT 950 - Advanced Studies in Probability and Statistics **Credits: 1-3**

Ph.D. Qualifying Exam

Students interested in pursuing the Ph.D. are required to first pass a departmental Qualifying Exam. Subsequently, students pursuing the Ph.D. must pass the doctoral preliminary examination (see below) in order to be approved for degree candidacy by the Graduate School.

Students must enroll in at least one credit hour during any and all semesters in which they are actively engaged in the qualifying examination process.

The purpose of the PhD qualifying exam is to assess the students' readiness for the coursework required for the PhD. The exam is designed so that students who possess an MS Degree in Statistics from Kansas State University or have a comparable academic background can take the exam immediately following admission into the PhD program. As part of the PhD program, all students are required to pass the qualifying exam.

The PhD qualifying exam is offered twice per year. The exam will be offered during the week before the Fall Semester (the Fall Exam) and the week before the Spring Semester (the Spring Exam). The qualifying exam is comprised of two sections: a 4-hour theoretical statistics exam and a 2-hour applied statistics exam. Each section is offered on a different day. The two sections are described below.

- Statistical Theory: This exam covers topics taught in STAT 770 and STAT 771.
- Applied Statistics: This exam covers topics taught in STAT 713.

Both exams are written exams, and the use of a computer is not permitted.

Students must receive a passing grade on both sections of the exam prior to the spring semester of their second full academic year in the program. The Spring Exam of a student's second full academic year is the last exam for which the student is eligible.

PhD students are granted two attempts at the qualifying exam. The last attempt must occur no later than the Spring semester of their second full academic year in the program.

Preliminary Exam

The Ph.D. Preliminary Exam consists of two components: a dissertation proposal and a public seminar.

Students must enroll in at least one credit hour during any and all semesters in which they are actively engaged in the preliminary examination process.

For more information please see the department website: <http://www.k-state.edu/stats/academics/gradstudents/DegreePhD.html>

Total Credit Hours Required for Doctorate: 90

Graduate Certificate

Applied Statistics Graduate Certificate

Contact: Juan Du

E-mail: dujuan@ksu.edu

Home Page: <http://www.k-state.edu/stats>

The Department of Statistics offers the Graduate Certificate in Applied Statistics to recognize the preparation and proficiency of non-majors in data analysis in a wide variety of subject matter areas. Graduate students in a variety of academic disciplines are conducting research that requires knowledge in applied statistics. Such students may wish to demonstrate proficiency in applied statistics as it may be useful when looking for meaningful employment opportunities, in addition to helping them become better researchers in their chosen fields. In order to strengthen their educational programs and the quality of graduate education, a Graduate Certificate in Applied Statistics has been developed.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

A minimum of 15 credit hours with at least a 3.0 GPA in applied statistics courses at the 700 level and above. These courses may also be used for a student's Program of Study in his/her chosen field if approved by the student's Graduate Committee.

Courses that can be used for the Graduate Certificate in Applied Statistics Program are:

At most 3 credit hours from the following three courses can be counted toward the certificate:

- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 706 - Basic Elements of Statistical Theory **Credits: 3**

At most 3 credit hours from the following two courses can be counted towards the certificate:

- STAT 705 - Regression and Analysis of Variance **Credits: 3**
- or
- STAT 713 - Applied Linear Statistical Models **Credits: 3**

Most of the classes listed above are prerequisites for the classes below. Students are recommended to take prerequisite courses before taking the courses below.

- STAT 710 - Sample Survey Methods **Credits: 3**
- STAT 716 - Nonparametric Statistics **Credits: 3**
- STAT 717 - Categorical Data Analysis **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**
- STAT 722 - Experimental Design for Product Development and Quality Improvement **Credits: 3**
- STAT 725 - Introduction to the SAS Computing **Credits: 1**
- STAT 726 - Introduction to R Computing **Credits: 1**
- STAT 727 - Statistical Computing/Numerical Methods of Statistics **Credits: 3**
- STAT 730 - Multivariate Statistical Methods **Credits: 3**
- STAT 736 - Bioassay **Credits: 2**
- STAT 745 - Statistical Graphics **Credits: 3**
- STAT 750 - Studies in Probability and Statistics **Credits: 1-4**
- STAT 760 - Optimization for Data Science **Credits: 3**
- STAT 761 - Discrete Optimization and Scalability for Data Science **Credits: 3**
- STAT 764 - Applied Spatio-Temporal Statistics **Credits: 3**
- STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics **Credits: 3**
- STAT 768 - Applied Bayesian Modeling and Prediction **Credits: 3**
- STAT 870 - Analysis of Messy Data **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Note

A maximum of three credit hours can be earned from coursework taken outside the Department of Statistics, either in another department on campus, or at another university. Persons wishing to apply such credits will gain approval from the director of the certificate program. Courses so approved must clearly be of an applied statistics nature, of a duration commensurate with the number of credit hours claimed on the certificate, and at a graduate level (under no circumstances will undergraduate courses be considered). The person asking for this exception will need to supply such information as deemed necessary by the director for such approval, possibly including syllabus and identification of textbook used.

Master of Science

Statistics (MS)

We offer two distinct tracks for the MS degree.

- **Mathematical Statistics track**
This is a traditional curriculum, designed for students who want a more theoretical background and those who intend to pursue a higher degree.
- **Data Science and Analytics track**
This track is more computational, with a balanced approach to modeling theory and practical skills that are in growing global demand for both the private and public sectors.

Master's degree requirements

All master students should have a background in mathematics at least at the level of calculus, along with prior knowledge of matrix or linear algebra. The Data Science and Analytics track requires proficiency of STAT 510 and STAT 511 or equivalent, and at least 3 credit hours of a programming language course that uses C, C++, Fortran, R or Python, for admission. Students without the background of STAT 510 and STAT 511 prior to admission are required to take extra credits to fulfill the requirement.

Course Requirements

Two master's degree completion options are available for each track: the master's report option and the non-report option.

- For the master's report option, the student must take 30 hours of coursework and write a report for 2 additional hours of credit in STAT 898 .
- For the non report option, the student must take 36 hours of coursework and pass a comprehensive exam for the Mathematical Statistics track, or complete a Capstone Project for the Data Science and Analytics track.
- Students must select either the report option or the non-report option by the first week of the fall semester of their second year in the MS program. At this time, the student is required to file a program of study. Students that do not file a program of study that specifies an explicit choice of degree option in a timely manner will be automatically assigned to the non-report option. Students are not allowed to switch between report versus non-report options after filing the program of study unless the switch is approved by the Graduate Program Committee.
- Students that are interested in pursuing the report option should contact potential faculty advisors by the end of their first year in the MS program in order to allow time to identify a suitable project.
- For both the Report Option and the Non-Report option: Students must be enrolled in at least one hour the semester in which they plan to complete the final examination or defend their report and graduate. In addition, international students should check with International Student and Scholar Services to be certain of the enrollment required.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses - Mathematical Statistics Track

For the Mathematical Statistics track, the course work must include:

- STAT 713 - Applied Linear Statistical Models **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**
- **OR** STAT 722 - Experimental Design for Product Development and Quality Improvement **Credits: 3**
- STAT 770 - Theory of Statistics I **Credits: 3**
- STAT 771 - Theory of Statistics II **Credits: 3**
- STAT 860 - Linear Models I **Credits: 3**
- STAT 861 - Linear Models II **Credits: 3**
- STAT 945 (Statistical Consulting) is recommended for those students with applied interests.
- STAT 945 - Problems in Statistical Consulting **Credits: 1-3**

Required Courses - Data Science and Analytics Track

For the Data Science and Analytics track, the course work must include:

- STAT 727 - Statistical Computing/Numerical Methods of Statistics **Credits: 3**
At least 3 credits from:
- STAT 760 - Optimization for Data Science **Credits: 3**
- STAT 761 - Discrete Optimization and Scalability for Data Science **Credits: 3**
At least 6 credits from:
- STAT 713 - Applied Linear Statistical Models **Credits: 3**
- STAT 717 - Categorical Data Analysis **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**
- **OR** STAT 722 - Experimental Design for Product Development and Quality Improvement **Credits: 3**
- STAT 730 - Multivariate Statistical Methods **Credits: 3**
At least 6 credits from:
- STAT 764 - Applied Spatio-Temporal Statistics **Credits: 3**
- STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics **Credits: 3**
- STAT 768 - Applied Bayesian Modeling and Prediction **Credits: 3**

Elective Courses

For both tracks, electives can be selected from Statistics courses at the 700 level and above, as well as from other departmental offerings, which requires approval by the department. Such approval is at the department's discretion.

Report Option Courses

- STAT 898 - Master's Report **Credits: 2**

Coursework Only Option Courses

For the non report option, the student must take 36 hours of coursework and pass a comprehensive exam for the Mathematical Statistics track, or complete a Capstone Project for the Data Science and Analytics track.

M.S. Exam or Capstone Project

Master's students in the non-report option in the Mathematical Statistics track will meet with the MS Exam committee near the beginning of the semester in which the student intends to take the MS Exam. The exam is offered twice each year, near the end of the fall and spring semesters. This committee will compose an exam based on material from STAT 770 , STAT 771 , and STAT 713 . The format will be a written 3 hour exam. A decision of Pass/Fail will be made by a two thirds vote in the exam committee, in accordance with section J.3 of the Graduate School Handbook. In the event of a Fail, a second attempt may be requested by the student in accordance with Graduate School policies.

Master's students in the non-report option in the Data Science and Analytics track will complete a capstone project, which can be conducted with industry, government, and academic partners, and which may result in the creation of a usable/public data product for real-world problems.

Students admitted to the Ph.D. program in statistics may, with approval of the MS Exam committee, use the Ph.D. Qualifying Exams to satisfy the exam requirement of the M.S. non-report option. A passing mark on at least one Ph.D. qualifying exam will be interpreted as a pass of the MS. Exam.

Note:

- Students planning to pursue the PhD in Statistics at K-State are required to take STAT 720 .
- Master's students wishing to continue for the PhD must apply for admission to that program. Students should meet with the Department Head regarding available funding.

Total Hours Required for Master's: 30-36

College of Business Administration

Kevin Gwinner, Edgerley Family Dean

Chwen Sheu, Associate Dean for Academic Programs

Dawne Martin, Assistant Dean for Diversity

Olivia Law-Delrosso, Assistant Dean for Diversity, Equity, Inclusion and Belonging

Bente Janda, Assistant Dean for Undergraduate Student Services

2004 Business Building

1301 Lover's Lane

Manhattan, KS. 66506

785-532-7190

gradbusiness@ksu.edu

<https://cba.k-state.edu/>

Mission statement

The mission of the College of Business Administration at Kansas State University is excellence in the advancement and dissemination of knowledge consistent with the needs of students, business, faculty and society.

Principles

To accomplish our mission, we strive for quality in our intellectual contributions, teaching and service activities.

1. Intellectual contributions include basic and applied scholarship and instructional development. These activities support and foster continuous improvement in teaching and hence are inseparable from it. The College, therefore, places major and approximately equal emphasis on intellectual contributions and teaching, while providing sufficient flexibility to accommodate the unique objectives of individual departments. Service receives relatively minor emphasis.
2. Within the area of intellectual contributions, we seek a balance between basic scholarship, applied scholarship and instructional development, while again providing sufficient flexibility to accommodate the unique objectives of each department. These contributions address both domestic and global market environments and are disseminated in the classroom, scholarly and applied journals, professional conferences, books and continuing education courses.
3. Quality teaching goes beyond merely emphasizing a body of knowledge. We help students develop a sense of values; an appreciation of the diversity of their world; an ability to work with others and to communicate effectively; the skill to solve complex and ambiguous problems and a belief in lifelong learning.
4. To maintain the high quality of our degree programs, we continuously review and improve them in accordance with the principles above.

Accreditation

Kansas State University's College of Business Administration is accredited by the Association to Advance Collegiate Schools of Business (AACSB) at both the undergraduate and graduate levels.

The International Association of Management Education is an international organization that requires that its members maintain high educational standards. The AACSB is recognized as the sole accrediting agency for baccalaureate and master's degree programs in business administration by the U.S. Office of Education and the Council on Post-Secondary Accreditation. Members of the organization have established high standards for the professional achievement of the faculty, their teaching effectiveness and research productivity, proper balance in the curriculum, and effective student job placement. AACSB-accredited programs meet the rigorous standards of quality set by the organization. Only 25 percent of the approximately 1,300 Colleges of Business Administration in the United States are accredited by the AACSB. The Department of Accounting became the first in Kansas to receive accreditation by the AACSB for both undergraduate and graduate programs. Approximately 50 graduate accounting programs are accredited in the United States, which places the master of accountancy program among the top in the nation.

Application requirements

A complete application file must be received in the College of Business Administration Graduate Studies Office before the deadlines indicated below in order to be considered for admission. Requests for financial aid applications (assistantships, scholarships, and/or fellowships) should be communicated directly to the Director of Graduate Studies using the above address and telephone number or the email address below. The following items constitute a complete application:

- completed Application for Admission to Graduate School (Online application is preferred.)
- non-refundable application fee (Online fee payment is preferred.)
- official record of your GMAT score sent directly from Educational Testing Service (ETS). (GMAT waiver is considered for an applicant who demonstrates a high level of academic performance, analytical skill, and ability of academic success.)
- two official copies of your transcript(s) from all universities attended
- three letters of recommendation from former professors or employers (Reference Form for Graduate Study preferred)
- one page Statement of Objectives in pursuing the program
- official record of your TOEFL score sent directly from ETS (for applicants whose native language is not English)
- completed Affidavit of Financial Support [PDF] dated **within nine months of desired entry date** (for international applicants only) Note: Substitute documentation other than the Affidavit cannot be accepted

Deadlines

Students are admitted to the MBA program only at the start of the Fall semester. The completed application deadline is March 1.

Assistantships

Many graduate teaching and research assistantships are available each year. Assistantships vary between two-tenths and four-tenths time (40-hour per week basis) for the nine-month academic year. The amount of such stipends is reviewed annually. Some assistantships also carry a partial tuition waiver. A student on a four-tenths time appointment may not carry more than 12 credit hours per semester.

In recent years, graduate assistants have performed research with professors, advised undergraduate students, proctored exams, and assisted in the college's computer laboratory. An applicant interested in obtaining an assistantship should request an application form from the Director of Graduate Studies. When possible, all assistantship positions will be granted immediately following the application deadlines.

For specific information about graduate assistantships, fellowships, or College of Business Administration scholarships, contact the Director of Graduate Studies.

Accelerated Degree

Accelerated Computer Science (BS)/Master of Business Administration (MBA)

Dual Degree

Master of Business Administration and MS in Hospitality Administration

Accelerated

Accelerated Business Administration (BSBA)/Data Analytics (MS)

The accelerated Accelerated Business Administration (BSBA)/Data Analytics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Data Analytics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the stand-alone MSDA degree except that completion of the B.S.B.A. degree is not required. Students may begin the application process in the semester they are completing the final course requirement for admission, but formal admission will not be granted until all admission requirements are completed. The student must submit all of the following documents to be considered. Typically, application is made in the second semester of the student's Junior year, with acceptance following posting of final grades.

- KSU graduate application form completed on-line before semester of enrollment.
- Student's statement of academic objective(s).
- Two letters of recommendation.
- Official transcript(s) of all undergraduate work.

Admission to the MSDA program is provisional, subject to completion of the B.S.B.A. degree and maintaining a 3.0 GPA in the final 60 credit hours of coursework. Once admitted, the requirements for the graduate degree are the same as for the regular

MSDA program. Students may count up to 9 credit hours of courses taken for graduate credit toward the unrestricted electives in the B.S.B.A. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Data Analytics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CIS 731 - Programming Techniques for Data Science and Analytics **Credits: 3**
- ECON 630 - Introduction to Econometrics **Credits: 3**
- MIS 665 - Business Analytics and Data Mining **Credits: 3**
- MIS 670 - Social Media Analytics and Web Mining **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Business Administration (BSBA)/Master of Business Administration (MBA)

The accelerated Accelerated Business Administration (BSBA)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the stand-alone MBA degree except that completion of the B.S.B.A. degree is not required. Students may begin the application process in the semester they are completing the final course requirement for admission, but formal admission will not be granted until all admission requirements are completed. The student must submit all of the following documents to be considered. Typically, application is made in the second semester of the student's Junior year, with acceptance following posting of final grades.

- KSU graduate application form completed on-line before semester of enrollment.
- Student's statement of academic objective(s).
- Official transcript(s) of all undergraduate work.

Admission to the MBA program is provisional, subject to completion of the B.S.B.A. degree and maintaining a 3.0 GPA in the final 60 credit hours of coursework. Once admitted, the requirements for the graduate degree are the same as for the regular MBA program. Students may count up to 9 credit hours of courses taken for graduate credit toward the unrestricted electives in the B.S.B.A. The B.S. degree may be awarded at any time following the completion of the undergraduate degree requirements. Alternatively, the B.S. and MBA degrees may be awarded concurrently.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FINAN 653 - Security and Portfolio Analysis **Credits: 3**
- MANGT 630 - Sports Management **Credits: 3**
- MANGT 662 - Procurement, Logistics and Supply Chain Design **Credits: 3**
- MIS 665 - Business Analytics and Data Mining **Credits: 3**
- MKTG 690 - Marketing Strategy **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.

- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Dual Master of Business Administration (MBA)/Master of Accountancy (MACC)

Location(s): Manhattan Campus

The dual Master of Business Administration (MBA) / Master of Accountancy (MACC) provides graduate students the opportunity to earn an MBA and MAcc at the same time as well as the ability to count 6 hours of electives dually towards the MBA and MAcc. The MBA portion is designed to advance the knowledge and practice of business administration. The Master of Accountancy portion is designed to prepare students for a career in Corporate Accounting & Finance (CMA path) or Professional Accounting (CPA path). Regardless of the path, students will be challenged with cutting-edge topics such as Accounting Analytics, Financial Statement Analysis, and International and Multijurisdictional Taxation. Students graduating from the dual degree program will receive two degrees, an MBA and an MAcc. The program requires the completion of 54 credit hours: 30 credit hours for the MBA program and 24 credit hours in the MAcc program. The degrees are conferred simultaneously when all requirements for the dual degree program have been met.

Admission Requirements

The admission requirements do not change for either program. The applicant must meet the eligibility requirements for both programs.

The student must be seeking an MBA and MAcc degree from the College of Business Administration

The person seeking admission to the MBA/MAcc Dual Degree Program must:

Complete an application on CollegeNet (<https://www.applyweb.com/kstateg>) using Dual MBA/MAcc program link. Students desiring to apply only to the MBA or MAcc should select that specific program NOT the dual degree option in CollegeNet. The link will be accessible from the College of Business portal. Application materials include: official transcript of all completed academic work; GRE or GMAT scores and TOEFL scores, if applicable; statement of objectives; resume; and an Affidavit of Financial Support, if applicable.

The graduate admission committee of each program will evaluate the MBA/MAcc application separately, and only those who are accepted by both programs will be admitted to the Dual MBA/MAcc program.

A student who is initially admitted to either the MBA or MAcc degree and who later decides to pursue the dual degree must apply for change of degree to the MBA/MAcc dual degree prior to being awarded the first degree.

Students admitted to the MBA/MAcc joint degree program who later decide they only want to complete one of the degrees must: Submit a written notification to both programs.

Must have their primary program plan changed to reflect the degree to be completed.

Submit a new program of study for the degree program they will complete to the graduate school for an approval. Students must complete the requirements for the respective program to receive the MBA or MAcc degree.

Application Process

The application process is the same as for the stand-alone MBA and MAcc degrees. The student must submit all of the following documents to be considered. KSU graduate application form completed on-line before semester of enrollment.

Student's statement of academic objective(s).

Official transcript(s) of all undergraduate work.

Course Requirements

The program structure is the same as the individual programs except that students are able to count 6 hours of elective credit towards both programs.

Prerequisites

Curriculum prerequisite courses (MBA)

Six hours of economics

MATH 205 General Calculus and Linear Algebra or evidence of equivalent preparation

An undergraduate statistics course or equivalent preparation (STAT 703 must be taken in the first year of the program)

Curriculum prerequisite courses (MAcc)

Prior business and accounting training achieving basic competency in the following business core foundation areas: accounting, statistics, management information systems, economics, finance, marketing, and management, as determined by prior coursework. You may acquire these competencies by completing additional business core foundation coursework even after applying to the program.

Total Hours Required for MBA: 36

Total Hours Required for MAcc: 30

Graduate Certificate

Data Analytics Graduate Certificate

Contact: Chwen Sheu

E-mail: gradbusiness@ksu.edu

Home Page: global.k-state.edu/business/analytics/

A 15-credit-hour graduate certificate program, delivered completely online, is offered to enable students to increase their knowledge and to prepare them for expanding opportunities in this high demand area. The area of Data Analytics is broad, and the skill needs of professionals in this area span both technical data science capabilities and applied data analytics capabilities. As such, the certificate brings together courses that are foundational to knowledge and skill development in both data sciences and applied data analytics, in order to provide alternatives to develop a personalized plan to meet the needs of individual students in the program.

The Data Analytics certificate is a cooperative interdisciplinary program of the colleges of Business Administration, Arts and Sciences, and Engineering. The College of Business Administration serves as the academic home for the program, coordinating administration of the program and providing administrative support.

Academically, the program is governed by a steering committee with representatives from the participating departments, currently Computing and Information Sciences, Industrial and Manufacturing Systems Engineering, Management, Marketing, Mathematics, Statistics, and Global Campus.

Two faculty, one with an applied analytics focus and the other with a focus on data science, serve as advisors for the program. The advisors provide curriculum leadership, respond to student inquiries, evaluate student admissions, advise students and develop plans of study, as well as other academic related tasks. All correspondence should be directed to the College of Business Administration.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Data Analytics at Kansas State University.

Course Requirements

Required Courses

The Graduate Certificate in Data Analytics consists of 15 credit hours.

Students will be required to complete 12 credit hours from the list of approved courses below plus a 3-credit-hour capstone course. Each student will be required to take at least one course from each area to ensure that they are gaining background in both data science and applied analytics. Additional credits may be earned from the selection of elective courses.

- CIS 730 - Principles of Artificial Intelligence Credits: 3

- CIS 732 - Machine Learning and Pattern Recognition Credits: 3
- CIS 734 - Introduction to Genomics and Bioinformatics Credits: 4
- CIS 833 - Information Retrieval and Text Mining Credits: 3
- ECE 841 - Network Theory Credits: 3
- MATH 725 - The Mathematics of Data and Networks I Credits: 3
- MATH 726 - The Mathematics of Data and Networks II Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 730 - Multivariate Statistical Methods Credits: 3

Courses in Applied Analytics

- IMSE 785 - Big Data Analytics Credits: 3
- MIS 665 - Business Analytics and Data Mining Credits: 3
- MIS 670 - Social Media Analytics and Web Mining Credits: 3
- MKTG 880 - Applied Marketing Analytics Credits: 3
- MKTG 881 - Advanced Marketing Analytics Credits: 3

Capstone Course

- GENBA 894 - Data Analytics Capstone Credits: 3

Total Hours Required for Graduate Certificate: 15

Master of Business Administration

Master of Business Administration (MBA)

The master of business administration (MBA) program, offered through the College of Business Administration, is designed to provide professional business education to individuals who wish to pursue a variety of administrative careers in both the private and public sectors. The theme of the curriculum is intrapreneurship which can be defined as an "entrepreneurial attitude and approach to management and problem-solving within any organization, large or small." Throughout the program, the focus is "what one needs to know to run a business" while developing the ability to analyze all types of business situations and propose appropriate, creative and financially sound solutions. The curriculum combines conceptual, analytical and experiential approaches to learning both in and out of the classroom. Once the foundation of basic problem solving tools and knowledge in each functional area is established, the program deepens the interdisciplinary understanding of problem-solving approaches and their functional, ethical, environmental and international ramifications. The program concludes with a culminating learning experience.

The MBA curriculum is a 36 credit hour program designed to be completed in one and a half to two years of full-time study or four years of part-time, typically evening study. Three components comprise the curriculum:

- Business core (24 credit hours)
- Culminating experience (3 credit hours)
- Set of Electives (9 credit hours-see below)

On-Campus students may choose to pursue a prespecified, focused Concentration in lieu of the Set of Electives. Students pursuing a masters degree in another field may choose to use 9 credit hours from their other Masters as the Set of Electives in the MBA. Thus, a dual Masters/MBA can be obtained with an additional 27 credit hours.

The culminating experience requirement can be accomplished in one of two ways: (1) approved internship (campus students only), or (2) a business capstone course.

Online students must have three years of full-time approved work experience and should take GENBA 875 International Business Experience (3 credits), MIS 830 - Information Technology Strategy and Application (3 credits), and one three hour elective in place of the Set of Electives.

Before beginning the MBA coursework, students must acquire basic competency in mathematical analysis, statistics and economic theory and analysis. These competencies may be acquired through specific undergraduate course work with the number of courses required depending on the applicant's prior academic work. This basic competency coursework may be taken after admission to the MBA program during the student's first semester.

Once admitted, MBA students are responsible for making themselves aware of Graduate School policies and deadlines.

Areas of concentration - Available only to on-campus students

K-State's MBA offers its on-campus students the opportunity to gain general business knowledge as well as develop a focus in a particular area of interest. Concentration areas are available in accounting, data analytics, finance, management, technology entrepreneurship, and international business. Students must take 12 credit hours in the concentration area. Specific courses have been carefully developed to complement one another and best meet the needs of our students. Students wishing to complete specific concentrations will be restricted to designated course work.

Accounting

The MBA concentration in accounting allows students to expand their basic knowledge of accounting topics. It is not intended to be a substitute for a masters degree in accounting, nor to prepare students for the CPA exam. Students interested in a career in accounting should enroll in the Master of Accountancy (MAcc) program.

Data Analytics

A concentration in data analytics will allow students to analyze large data sets to provide insight for practical problems, and to relate patterns shown in the data to real-world situations and communicate the implications of these patterns to others.

Finance

The finance concentration will allow students to combine the broad MBA education with specific skills necessary to be a successful financial analyst or manager. Students will specialize in controlling the resource investments required to support an enterprise's operating activities, planning and negotiating appropriate financing arrangements to support these investment requirements, and managing the risks inherent in an enterprise's investment and financing activities.

Management

A concentration in management will allow a student to develop their knowledge in human resource management and/or operations management. Courses are offered in a variety of areas of management such as leadership, entrepreneurship, supply chain management, personnel law, etc.

Marketing

A concentration in marketing will allow a student to develop their knowledge of marketing strategy, research, analytics and sales management. Courses are offered in a variety of areas in marketing.

Technology entrepreneurship

The technology entrepreneurship concentration allows graduate students to gain valuable exposure to the innovation and technology commercialization process at Kansas State University through in-class teaching and on-the-job training programs. Students in the concentration focus on the creation and management of innovation in organizations with a particular emphasis on the commercialization of intellectual property. Students with undergraduate degrees in the sciences and engineering are especially encouraged to consider this concentration as part of their programs.

International Business

The international business concentration provides graduate students with the knowledge and skills to conduct business in a global context. Students are required to understand the international dimensions of business. Courses are offered in various areas, including accounting, management, marketing, and finance.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Curriculum prerequisite courses

- Six hours of economics
- MATH 205 - General Calculus **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
or equivalent preparation

Required Courses

24 credit hours; may waive 6 credit hours if "B" or better is achieved in equivalent courses at the discretion of the program director. Typically waivers are only granted for multiple undergraduate courses taken, and only credits from AACSB accredited institutions are accepted.

- ACCTG 710 - Foundations of Accounting **Credits: 3**
- ECON 815 - Economic Analysis for Business **Credits: 3**
- FINAN 715 - Foundations of Finance **Credits: 3**
- MANGT 710 - Operations and Supply Chain Management **Credits: 3**
- MANGT 720 - Managing Organizational Behavior **Credits: 3**
- MANGT 860 - Managing the Triple Bottom Line Business **Credits: 3**
- MANGT 880 - Strategic Management **Credits: 3**
- MKTG 705 - Marketing Concepts and Research **Credits: 3**

Integrated course

- GENBA 890 - Business Capstone **Credits: 3**

Electives/concentration

9 credit hours of courses offered at the graduate level (600 or above) from any college, **with the approval from the student's advisory committee**. Similar courses available at both the upper-division undergraduate (600) and graduate (700-800) level **MUST** be taken at the graduate level. A limited number of business concentrations will be available on campus only.

Online students must have the following in lieu of the series of electives

- Three years of full-time approved work experience
 - One elective offered for graduate credit **Credits:** (3)
 - MIS 830 - Business Intelligence and Storytelling in Cloud Environments **Credits:** 3
 - GENBA 875 - MBA International Business Experience **Credits:** 1-3
- * GENBA 875 3 credits required

Total Hours Required for Master's: 36

Master of Science

Data Analytics (MS)

This Master of Science – Data Analytics (MS-DA) program is a graduate program, in collaboration with the Departments of Computer Science, Economics, Mathematics, Industrial Management and Systems Engineering, Statistics, and Geography, focusing on using advanced technologies to manipulate big data, utilizing rigorous methods to interpret the data, and obtaining the business skills necessary to translate understanding into actionable organizational strategies. Specifically, upon completion of the Master of Science – Data Analytics program, students will possess the following knowledge and skills:

Knowledge

- demonstrate knowledge of big data management, predictive modeling using machine learning/statistical methods, and model validation and evaluation
- demonstrate knowledge of analytics project requirements, data acquisition and visualization, and business communication/presentation

Skills

- demonstrate the ability to convert client's business (or problem domain) into analytics project requirements
- demonstrate the ability to collect data from social media and corporate databases, to assess data quality assessment, and provide analysis in terms of exploratory data analysis and data visualization
- demonstrate the ability to clean and transform raw data sets for further data analytics processes
- demonstrate the ability to use various machine learning algorithms (e.g., hierarchical clustering, association) & statistical modeling techniques (e.g., regression, classification) to the data, including feature engineering and parameter optimization
- demonstrate the ability to use proper model validation (e.g., cross validation) and evaluation methods and performance metrics (e.g., prediction accuracy)
- demonstrate the ability to interpret model outputs, develop managerial and technical implications, and express oneself clearly, accurately, and professionally in both oral and written form

Students will be required to complete 30 hours of coursework: 21 hours of required and 9 hours of electives (Data Science track or Applied Analytics track).

Course Requirements

The coursework only option for this program does not require a culminating experience.

Required Courses

21 credit hours

- CIS 731 - Programming Techniques for Data Science and Analytics Credits: 3
OR
- MANGT 725 - Organizational Management and Data Analytics Credits: 3
OR
- MANGT 897 - Topics in Management Contemporary Issues in Management Credits: 3
OR
- MKTG 881 - Advanced Marketing Analytics Credits: 3
- ECON 630 - Introduction to Econometrics Credits: 3
- IMSE 785 - Big Data Analytics Credits: 3
- MIS 830 - Business Intelligence and Storytelling in Cloud Environments Credits: 3
- MIS 665 - Business Analytics and Data Mining Credits: 3
- MIS 670 - Social Media Analytics and Web Mining Credits: 3
- MKTG 880 - Applied Marketing Analytics Credits: 3

Track Electives: 9 credit hours

Data Science Track

- CIS 730 - Principles of Artificial Intelligence Credits: 3
- CIS 732 - Machine Learning and Pattern Recognition Credits: 3
- CIS 733 - Data Science Foundations Credits: 3
- CIS 751 - Computer and Information Security Credits: 3
- CIS 833 - Information Retrieval and Text Mining Credits: 3
- IMSE 680 - Quantitative Problem Solving Techniques Credits: 3
- MATH 725 - The Mathematics of Data and Networks I Credits: 3
- MATH 726 - The Mathematics of Data and Networks II Credits: 3
- STAT 717 - Categorical Data Analysis Credits: 3
- STAT 730 - Multivariate Statistical Methods Credits: 3
- STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics Credits: 3

Applied Analytics Track

- ACCTG 844 - Design of Accounting and Business Information Processes Credits: 3
- ACCTG 856 - Accounting Analytics Credits: 3
- CIS 732 - Machine Learning and Pattern Recognition Credits: 3
- ECON 686 - Economics Forecasting Credits: 3
- FINAN 623 - Financial Modeling Credits: 3
- GEOG 608 - Geographic Information Systems II Credits: 3
- GEOG 712 - Internet GIS and Distributed Geographic Information Services Credits: 3
- GEOG 728 - Programming for Geographic Analysis Credits: 3
- GEOG 808 - Geocomputation Credits: 3
- GENBA 890 - Business Capstone Credits: 3
- GENBA 894 - Data Analytics Capstone Credits: 3
- IMSE 680 - Quantitative Problem Solving Techniques Credits: 3
- MANGT 662 - Procurement, Logistics and Supply Chain Design Credits: 3
- MANGT 663 - Supply Chain Analytics Credits: 3

- MANGT 725 - Organizational Management and Data Analytics Credits: 3
- MANGT 897 - Topics in Management Contemporary Issues in Management Credits: 3
- MKTG 881 - Advanced Marketing Analytics Credits: 3
- STAT 730 - Multivariate Statistical Methods Credits: 3
- STAT 766 - Applied Data Mining/Machine Learning and Predictive Analytics Credits: 3

Total Hours Required for Master's: 30

Accounting

Brett Wilkinson, Head

Chwen Sheu, Director of Graduate Studies

Business Building Ste 2140

1301 Lovers Lane

785-532-6184

Fax: 785-532-7809

E-mail: gradbusiness@ksu.edu

<https://cba.k-state.edu/academics/departments/accounting/>

Mission Statement

The mission of the Department of Accounting at Kansas State University is to ensure a quality liberal, general business, and accounting education at the undergraduate and master's levels that prepares students to become both productive citizens and successful professional accountants.

Statement of Focus and Commitment

The focus of the faculty of the Department of Accounting in achieving its mission is on maintaining a responsive accounting program that provides students with sufficient technical and conceptual knowledge for a successful career in accounting as well as with the problem-solving and communication skills necessary to apply their knowledge in a professional setting.

To maintain such a program and as a matter of principle, the faculty of the Department of Accounting is committed to and considers its highest priority high-quality teaching, including innovative curriculum and other instructional development. The faculty is also committed to research and other forms of scholarly activity that add to the body of knowledge or support and foster improvement in teaching. In addition, the faculty is committed to participation in service activities that advance the profession and maintain the faculty's professional currentness.

Also to maintain such a program and as a matter of principle, the faculty of the Department of Accounting is committed to attracting and retaining highly motivated students with promise of success both in the Department's academic program and in the accounting profession. To this end, the faculty actively engages in student recruitment and placement, and strives to provide a supportive instructional environment.

Accelerated

Accelerated Accounting (BSBA)/Master of Accountancy (MACC)

The accelerated Accelerated Accounting (BSBA)/Master of Accountancy (MACC) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Accountancy degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the stand-alone MACC degree, except that completion of the BSBA degree is not required, and the GMAT score requirement will be waived as long as the student maintains a 3.000 GPA in the last 60 hours of coursework and 3.000 in accounting. The student must submit all of the following documents to be considered. Students may begin the application process in the semester they are completing the final course requirement for admission, but formal admission will not be granted until all admission requirements are completed. Typically, application is made in the second semester of the student's Junior year, with acceptance following posting of final grades.

- K-State's graduate application form is completed online and submitted before the semester of enrollment. The application fee is submitted with the application.
- Applicant's statement of academic objective(s) must be submitted with the application.
- Three letters of recommendation are required.
- Transcript(s) of all undergraduate work must be submitted through the Graduate School's online application system.

Admission to the MACC program is provisional, subject to completion of the BSBA degree and maintaining a 3.000 GPA in the final 60 credit hours of coursework with a 3.000 in all accounting courses. Once admitted, the requirements for the graduate degree are the same as for the regular MACC program. Students may count up to 9 credit hours of courses taken for graduate credit toward the unrestricted electives in the BSBA. The BSBA degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The student must have a GPA of 3.000 or above in all accounting courses completed at Kansas State University and a cumulative undergraduate GPA of 3.000 or above.

Course Requirements

Master of Accountancy (MACC)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ACCTG 641 - Intermediate Accounting and Analytics III **Credits: 3**
- ACCTG 642 - Accounting Research and Communication **Credits: 3**
- ECON 530 - Money and Banking **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Business Administration (BSBA)/Master of Accountancy (MACC)

The accelerated Accelerated Business Administration (BSBA)/Master of Accountancy (MACC) will provide high-performing undergraduates the opportunity to pursue an accelerated Master in Accountancy degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the stand-alone MAcc degree except that completion of the B.S.B.A. degree is not required. Students may begin the application process in the semester they are completing the final course requirement for admission, but formal admission will not be granted until all admission requirements are completed. The student must submit all of the following documents to be considered. Typically, application is made in the second semester of the student's Junior year, with acceptance following posting of final grades.

- KSU graduate application form completed on-line before semester of enrollment.
- Student's statement of academic objective(s).
- Official transcript(s) of all undergraduate work.

Admission to the MAcc program is provisional, subject to completion of the B.S.B.A. degree and maintaining a 3.0 GPA in the final 60 credit hours of coursework. Once admitted, the requirements for the graduate degree are the same as for the regular MAcc program. Students may count up to 9 credit hours of courses taken for graduate credit toward the unrestricted electives in the B.S.B.A. The B.S. degree may be awarded at any time following the completion of the undergraduate degree requirements. Alternatively, the B.S. and MAcc degrees may be awarded concurrently.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.

- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Master of Accountancy (MACC)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ACCTG 631 - Accounting Internship **Credits: 0-3**
- ACCTG 641 - Intermediate Accounting and Analytics III **Credits: 3**
- ACCTG 642 - Accounting Research and Communication **Credits: 3**
- FINAN 675 - Cases in Finance **Credits: 3**
- MKTG 690 - Marketing Strategy **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Master of Accountancy

Master of Accountancy (MACC)

The M.ACC curriculum is a 30-credit-hour program of study offered through the Accounting graduate program that may be completed in two regular semesters and a summer term or in three semesters. Students without prior or complete business and accounting training must acquire basic competency in the following business core foundation areas: accounting, statistics, management information systems, economics, finance, marketing, and management. These competencies may be acquired through specified business core foundation course work. The specific number of business core foundation courses required depends on the applicant's prior academic work. The basic competency course work may be taken after admission to the MAcc program, but certain business core foundation courses must be completed prior to taking MAcc courses that are in the same subject or that otherwise require a knowledge of the business core foundation material.

The objective of the master of accountancy program is to provide candidates with a greater breadth and depth in accounting than is possible in the baccalaureate or master of business administration program in preparation for careers as professional accountants in financial institutions, government, industry, nonprofit organizations, and public practice. For complete application information, see the College of Business Administration website.

Course Requirements

All MAcc students are expected to make themselves aware of and conform to the academic policies of the Graduate School as described in the Graduate Handbook and the Graduate Catalog. **In addition to an overall 3.0 GPA required by the graduate school, Master of Accountancy students must maintain a 3.0 GPA in graduate accounting course.**

Required Courses

- ACCTG 811 - Advanced Financial Reporting **Credits: 3**

Accounting Electives (12 credit hours)

Students may select 12 credit hours from ACCTG labelled courses at the 800 level. Students are encouraged to consult with their Master of Accountancy advisor to design a set of accounting and other electives consistent with their planned career objective.

- ACCTG 710 - Foundations of Accounting **Credits: 3**
- ACCTG 831 - Fraud and Forensics **Credits: 3**
- ACCTG 832 - Advanced Auditing **Credits: 3**
- ACCTG 833 - Corporate Taxation **Credits: 3**
- ACCTG 834 - Partnership Taxation **Credits: 3**
- ACCTG 835 - Business Consulting & Advanced Managerial Accounting **Credits: 3**
- ACCTG 841 - Advanced Accounting Theory **Credits: 3**
- ACCTG 842 - Advanced Topics in Taxation **Credits: 3**
- ACCTG 844 - Design of Accounting and Business Information Processes **Credits: 3**
- ACCTG 845 - International Accounting **Credits: 3**
- ACCTG 846 - International and Multijurisdictional Taxation **Credits: 3**
- ACCTG 852 - Accounting Research and Communication **Credits: 3**
- ACCTG 855 - Financial Statement Analysis and Business Valuation **Credits: 3**
- ACCTG 856 - Accounting Analytics **Credits: 3**
- ACCTG 857 - Accounting for Not-For-Profit Entities **Credits: 3**
- ACCTG 860 - Management Accounting and Business Problem Solving **Credits: 3**
- ACCTG 870 - Problems in Accounting **Credits: 3**
- ACCTG 890 - Seminars in Professional Accounting **Credits: 1-6**
- ACCTG 895 - Accounting Internship **Credits: 3**
- ACCTG 896 - Accounting International Experience **Credits: 1-6**

Other Electives (12 credit hours)

Students may select courses based on the following criteria.

- Any accounting course at the 800 level not taken as an accounting elective.
- Other business or non-business courses at the 600 level or above *approved by the student's supervisory committee.*

Culminating experience

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

All students must complete one of the following four activities as an integrative/culminating experience as part of the Master of Accountancy program. The experience must be completed after admission to the program, or after commencement of graduate coursework, whichever is earlier.

- An approved study abroad experience of at least 7 days (for or not for credit)
- An approved internship consisting of at least four weeks of full-time work (for or not for credit)
- A course such as GENBA 890 involving a semester-long hands-on project.
- A written comprehensive exam

Consult with your Master of Accountancy advisor prior to commencing any integrative/culminating activity for pre-approval.

Total Hours Required for Master's: 30

Finance

Benjamin Johnson, Head

Chwen Sheu, Director of graduate studies

Business Building Ste 3092

1301 Lovers Lane

785-532-6892

Fax: 785-532-7809

gradbusiness@ksu.edu

<https://cba.k-state.edu/academics/departments/finance/>

Programs

The Department of Finance supports the Master of Business Administration (MBA) and Master of Accountancy (MACC) degrees.

Management

William Turnley, Head

Chwen Sheu, Director of graduate studies

Business Building Suite 3091

1301 Lovers Lane

785-532-6296

Fax: 785-532-7809

gradbusiness@ksu.edu

<https://cba.k-state.edu/academics/departments/management/>

Programs

The Department of Management supports the Master of Business Administration (MBA) and Master of Accountancy (MACC) degrees.

Graduate Certificate

Business Administration Graduate Certificate

Contact: Chwen Sheu

E-mail: gradbusiness@ksu.edu

Home Page: www.dce.k-state.edu/business/administration/

DCE Home Page: <http://www.dce.ksu.edu/gradcib/>

The graduate certificate in Business Administration is offered through College of Business Administration. The certificate is designed for non-business graduate students who want to gain basic business knowledge in five different functional areas of business. Students in the certificate program are expected to complete 15 credit hours in accounting, finance, marketing, operations management and behavior management. The primary goal of the business certificate program is to prepare any graduate student so that he or she is better able to both "speak" and understand the language of business and interact successfully with anyone in the business world.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Business Administration at Kansas State University.

Course Requirements

Required Courses

- ACCTG 710 - Foundations of Accounting **Credits: 3**
- FINAN 715 - Foundations of Finance **Credits: 3**
- MANGT 710 - Operations and Supply Chain Management **Credits: 3**
- MANGT 720 - Managing Organizational Behavior **Credits: 3**
- MKTG 705 - Marketing Concepts and Research **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Marketing

Esther Swilley, Head

Business Building Ste 2093

1301 Lovers Lane

785-532-6008

Fax: 785-532-3709

gradbusiness@ksu.edu

<https://cba.k-state.edu/academics/departments/marketing/index.html>

Programs

The Department of Marketing supports the Master of Business Administration (MBA) and Master of Accountancy (MACC) degrees.

College of Education

Debbie K. Mercer, Dean
Cindy Shuman, Associate Dean for Research and External Funding
Todd F. Goodson, Associate Dean for Teacher Education and Accreditation
Roger Schieferecke, Assistant Dean, Director of the Center for Student Success

College of Education
006 Bluemont Hall
785-532-5525
Fax: 785-532-7304
coegrads@ksu.edu
<http://www.coe.ksu.edu>

"Preparing educators to be knowledgeable, ethical, caring decision makers for a diverse and changing world"

Our Mission is fulfilled through:

- the delivery of exemplary instruction to students at the undergraduate and graduate levels;
- production, interpretation, and dissemination of sound and useful research and scholarship;
- leadership, collaboration, and service within the profession;
- and promotion, understanding, and celebration of diversity.

Information about our Graduate Programs and Graduate Certificates can be found here
<http://coe.ksu.edu/academics/graduate/index.html>

General information including Graduate Assistantships, scholarships, enrolling in classes, and much more can be found here:
<http://coe.ksu.edu/grad/>

Curriculum and Instruction

J. Spencer Clark, Interim Chair
Kay Ann Taylor, Curriculum and Instruction Graduate Program Director

261 Bluemont Hall
785-532-5550
edci@ksu.edu
<https://coe.ksu.edu/academics/departments/curriculum-and-instruction/>

Admission

For graduate programs in Curriculum and Instruction, click on the program for application and admission requirements: <https://coe.k-state.edu/academics/graduate/curriculum-instruction/>

Program description

The curriculum and instruction graduate programs offer a variety of graduate-level courses in all curricular areas with specific emphasis upon trends and recent developments in practice, theory, and research. These courses are offered on-campus, at selected off-campus sites, or via distance learning.

This program supports the following degrees: the master of science in curriculum and instruction, the doctor of education in curriculum and instruction, and the doctor of philosophy in curriculum and instruction. In all of these programs, breadth of study is stressed with students taking courses in other programs in the College of Education and the university.

The program offers numerous short courses, workshops, and seminars in addition to courses in the catalog. These can be applied to degree programs or taken for personal or professional development unrelated to a degree program.

Doctor of Education

Curriculum and Instruction (EDD)

The Curriculum and Instruction Ed.D. program is directed by a minimum of five members of the university graduate faculty, including a major professor with substantial expertise in the area of emphasis, two other faculty members with strengths in the area of emphasis, one faculty member outside the student's specialization.

Each student's program of study is individualized with the approval of the major professor and the supervisory committee to optimize the student's interests, expertise, and professional goals.

Information on the Ed.D. programs may be obtained from the Curriculum and Instruction Graduate Program Director.

Admission Requirements

All students are required to meet the general university admission requirements.

- Undergraduate and graduate degree from a recognized and accredited institution
- If you are applying to the Ed.D., you must also meet the following requirements:
 - U.S. applicants must be currently employed as a teacher or administrator and remain under contract with an institution for the duration of the program.
 - International applicants must be currently employed as educators within their national system. Must have at least three years of teaching experience.

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Dissertation Requirements

Completion of a dissertation which treats an important topic of professional education practice using a systematic methodology consistent with accepted research paradigms; the dissertation must be successfully defended in a public, oral defense.

- EDCI 999 - Research in Curriculum and Instruction **Credits: 1-18**

Course Requirements

Prerequisite

An introductory survey to research methods and methodologies in the social sciences. The course may be included on the Program of Study.

Possible courses: EDCEP 816 Research Methods in Education or a course approved by the supervisory committee.

- EDCEP 816 - Research Methods in Education **Credits: 3**

Area of emphasis: 48 credit hours

Introductory Courses: 6 credit hours

- EDCI 900 - Introduction to Ed.D. Doctoral Studies **Credits: 3**
- EDCI 901 - Literature Reviews for Doctoral Research **Credits: 3**

Analysis and Interpretation of Educational Research: A Theory Course: 3 credit hours

Possible course includes:

- EDCI 907 - Curriculum Theory **Credits: 3**
Or, a Theory Course approved by the supervisory committee.

Courses with EDCI prefix: 12 credit hours

A minimum of 12 credit hours of the post-master's credits on the Ed.D. Program of Study must designate the EDCI prefix at the 800 or 900 course level. Research credits (EDCI 999) and internship credits (EDCI 991) may not be applied to the 12 credit hour minimum.

Courses in the major and minor area: 27 credit hours

Foundational Knowledge: 12 credit hours

Possible courses for 1-4 below include:

History and Philosophy of Educational Ideas and Practice: 3 credit hours

- EDCI 812 - History of Education **Credits: 3**
- EDCI 813 - Comparative Philosophies of Education **Credits: 3**

Education in a Diverse Society: 3 credit hours

- EDCI 864 - Social/Cultural Issues in Educational Technology **Credits: 3**

Supporting Positive Change through Educational Technology: 3 credit hours

- EDCI 866 - Educational Technology Change Management **Credits: 3**

Curriculum: 3 credit hours

- EDCI 831 - Contemporary Issues in Teaching and Learning **Credits: 3**
- EDCI 882 - Teaching and Learning Models **Credits: 3**

ELD Track: 9 credit hours

Applies to EFL track only; all 9 hours of EFL courses listed are required for EFL track

- EDCI 845 - ELD/Dual Language Methods **Credits: 3**
- EDCI 846 - ELD/Dual Language Culture and Language in Classroom Practice **Credits: 3**

- EDCI 847 - ELD/Dual Language Assessment **Credits: 3**

Or, Foundational Knowledge courses approved by the supervisory committee.

Research courses: 12 credit hours

Research courses addressing methodology consistent with that required for the dissertation and approved by the supervisory committee.

Possible courses include:

- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 819 - Survey Research **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDCI 912 - Historical Research Methods in Education **Credits: 3**
- EDCI 913 - Inquiry I – Statistical Analysis in Curriculum and Instruction **Credits: 3**
- EDCI 914 - Inquiry II – Qualitative Research in Curriculum and Instruction **Credits: 3**
- EDCI 915 - Inquiry III - Program Evaluation for Curriculum and Instruction **Credits: 3**
- EDCI 917 - Inquiry IV - Advanced Quantitative Methods in Curriculum & Instruction **Credits: 3**
- EDCI 918 - Inquiry IV - Advanced Qualitative Methods in Curriculum & Instruction **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3**
- EDLEA 948 - Data Representation and Writing in Qualitative Research **Credits: 3**

Or, Research courses approved by the supervisory committee.

Clinical Experience: 12 credit hours

- EDCI 991 - Internship in Curriculum and Instruction **Credits: 1-18**
Fall and Spring, year 1 and year 2

Research

16 credit hours

- EDCI 999 - Research in Curriculum and Instruction **Credits: 1-18**

Preliminary examination

Satisfactory completion of all segments of a written examination of at least 12 hours over all areas of the program of study.

Program Total Credits: 64

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Credit Hours Required for Doctorate: 94

Doctor of Philosophy

Curriculum and Instruction (PHD)

The Curriculum and Instruction Ph.D. program is directed by a minimum of four members of the graduate faculty, including a major professor with substantial expertise in the area of emphasis, two other faculty members with strengths in the area of emphasis, and one faculty member outside the Department of Curriculum and Instruction.

Each student's program of study is individualized with the approval of the major professor and the supervisory committee to optimize the student's interests, expertise, and professional goals.

Information on the Ph.D. programs may be obtained from the Curriculum and Instruction Graduate Program Director.

Admission Requirements

The Doctor of Philosophy (Ph.D.) in Curriculum and Instruction requires a minimum of 90 postbaccalaureate, graduate credit hours. A master's degree is a requirement for admission and, with the approval of the supervisory committee, up to 30 graduate hours earned as part of the Master's degree may be used to satisfy the 90 credits required for the doctorate.

Course Requirements

Areas of emphasis (54 credit hours)

Theory Course (3 credit hours)

Possible courses include:

- EDCI 907 - Curriculum Theory **Credits: 3** (This course is offered in the Fall of odd years.)
- Or a theory course in the content field (e.g., EDCI 818 Theoretical Models of Reading)
- Or a theory course approved by the advisor

Courses with the EDCI prefix (12 hours)

A minimum of 12 credit hours of the post-master's credits on the Ph.D. Program of Study must designate the EDCI prefix at the 800 or 900 course level. Research credits (EDCI 999) and internship credits (EDCI 991) may not be applied to the 12 credit hour minimum.

Courses in the major and minor area (42 hours)

Foundations of Education (3 credit hours)

Possible courses include:

- EDCI 812 - History of Education **Credits: 3**
- EDCI 813 - Comparative Philosophies of Education **Credits: 3**

Research courses (15 credit hours)

Programs of Study must include quantitative and qualitative methodologies.

Possible courses include:

- EDCI 912 - Historical Research Methods in Education **Credits: 3**
- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 819 - Survey Research **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3**
- EDLEA 948 - Data Representation and Writing in Qualitative Research **Credits: 3**

Note

EDCEP 816 Research Methods or its equivalent is considered a *prerequisite* for the 15 hours of research in the PhD program. Also, EDCI 760 Action Research in Education cannot be included in the 15-hour research course requirement.

Doctoral Research (18 hours minimum; no more than 30 hours)

- EDCI 999 - Research in Curriculum and Instruction **Credits: 1-18**

Preliminary examination

Satisfactory completion of all segments of an examination over all areas of the program of study.

Dissertation research (18 credit hours minimum; no more than 30 credit hours)

Completion of a dissertation which examines a topic congruent with the program of study using a systematic methodology consistent with accepted research paradigms; the dissertation must be successfully defended in a public, oral defense.

- EDCI 999 - Research in Curriculum and Instruction **Credits: 1-18 ; no more than 30**

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Computer Science Education Graduate Certificate

The Graduate Certificate in Computer Science Education is designed to expose in-service and preservice teachers to content and pedagogical knowledge associated with teaching computer science at the elementary and secondary levels. With a focus on

computational thinking skills, the certificate focuses on the connected nature of computer science to all core content areas in K-12 education.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Curriculum & Instruction, or a Doctorate of Curriculum & Instruction (EdD or PhD) at Kansas State University.

Course Requirements

Required Courses

- CC 710 - Introduction to Computing for Educators **Credits: 2**
- CC 711 - Computer Education Programming Fundamentals **Credits: 1**
- CC 730 - Computer Programming for Educators **Credits: 4**
- CC 750 - Data Structures and Algorithms for Educators I **Credits: 3**
- EDCI 765 - Contemporary Pedagogies for Teaching Computer Science **Credits: 3**

Elective Courses

Choose one of the following courses (3 credits)

- EDCI 768 - Teaching Computer Science in Elementary Schools **Credits: 3**
- EDCI 769 - Teaching Computer Science in Secondary Schools **Credits: 3**

Total Credit Hours Required for Graduate Certificate: 16

Dual Language Instruction Graduate Certificate

Participants will be prepared to teach in Dual Language classroom settings using evidence-based theories and practices.

Certificate can be completed by degree-seeking students at Kansas State University or as a free-standing credential on its own.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

15 credit hours

- EDCI 700 - Introduction to Bilingual/Dual Language Education **Credits: 3**
- EDCI 714 - Reading in the Bilingual/DL Classroom **Credits: 3**
- EDCI 720 - ESL/Dual Language Methods **Credits: 3**
- EDCI 740 - Culture and Language in Classroom Practice **Credits: 3**
- EDCI 742 - ESL/Dual Language Assessment **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Educational Technology Graduate Certificate

Contact: Deepak Prem Subramony

E-mail: deepak7@ksu.edu

This 12-credit graduate certificate focuses on the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources (following guidelines prescribed by the Association for Educational Communications and Technology).

Students seeking this certificate must submit a Graduate School application indicating the field of study will be the Educational Technology Graduate Certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants need to submit the following:

- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework.
- A statement of objectives explaining the goals and purposes for seeking this graduate certificate.
- Three letters of recommendation.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Curriculum and Instruction at Kansas State University.

Special Requirements

- EDCI 718 - Introduction to Educational Technology **Credits: 3**
- OR similar graduate level introductory educational technology course

Course Requirements

Required Courses

- EDCI 862 - Instructional Systems Design **Credits: 3**
- EDCI 863 - Online Teaching and Learning **Credits: 3**
- EDCI 864 - Social/Cultural Issues in Educational Technology **Credits: 3**
- EDCI 866 - Educational Technology Change Management **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Teaching and Learning Graduate Certificate

Contact: C&I Graduate Program Director

Department Contact info: edcigrad@ksu.edu, 785-532-5550 (Bluemont Hall, Room 261) Homepage: <https://coe.k-state.edu/academics/certificates/teaching-learning.html>

The Graduate Certificate in Teaching and Learning is offered through the Curriculum and Instruction graduate program. The certificate provides two tracks of graduate-level professional course work in education. The licensure track leads to teacher licensure to address critical statewide and national shortages in the following subjects:

- Agriculture (Grades 6-12)

- Art (Grades PK-12)
- Biology (Grades 6-12)
- Business (Grades 6-12)
- Chemistry (Grades 6-12)
- Earth and Space Sciences (Grades 6-12)
- English (Grades 6-12)
- Family and Consumer Sciences (Grades 6-12)
- Journalism (Grades 6-12)
- Mathematics (Grades 6-12)
- Modern Language (Grades PK-12)
- Music (Grades PK-12)
- Physical Education and Health (PK-12)
- Physics (Grades 6-12)
- Social Studies (Grades 6-12)
- Speech and Theatre (Grades 6-12)

The licensure track of the certificate program was designed to attract qualified candidates to the profession of teaching. Candidates must have a baccalaureate degree in the subject field where licensure is sought.

The licensure track certificate consists of 19-20 core credit hours with additional content area classes for licensure. Field experiences are required in PK-12 schools after the completion of these nine credit hours: EDCI 702 (Credits: 3) or MUSIC 810 (Credits: 3), EDCI 715 (Credits: 3), EDSP 711 (Credits: 3).

Questions concerning exceptions (or substitutions) within the licensure track should be directed to the College of Education's Licensure Officer (Center for Student Success and Professional Services, 785-532-5524).

The non-licensure track is offered to address global shortages in qualified teachers in ESL/EFL education (Grades PK-16). Candidates must have a baccalaureate degree in education. The non-licensure track is intended for international students through contractual relationships with the College of Education regarding international ESL programs.

The non-licensure track consists of two "blocks" of course work. The order in which Block I courses are completed may vary. However, all Block I courses must be completed prior to enrolling in the Block II Internship semester.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Curriculum and Instruction at Kansas State University. (Note: must apply for the M.S. first and then add the certificate)

English language proficiency

If your native language is not English, the Graduate School requires each applicant to provide a satisfactory test score for TOEFL, IELTS or PTE (see chart below).

An applicant who has received a degree in the last two years from a United States college or university is exempt from this requirement.

English Proficiency Test Score Requirements

Test	Minimum Score
IBT TOEFL (internet based)	79
TOEFL (PBT)	550

IELTS	6.5
Pearson Test of English (PTE)	58

The TOEFL is offered several times a year throughout the world by the Educational Testing Service. Accepted TOEFL test scores are from the TOEFL IBT (Internet Based Test) and TOEFL PBT (Paper Based Test). International applicants are advised to take the TOEFL as early as possible to avoid delays in the processing of their applications. Please request your scores to be sent to Kansas State University (K-State TOEFL school code 6334). All scores are valid for two years from the initial test date.

Admission Requirements

Acceptance of students leading to a Graduate Certificate in Teaching and Learning is contingent on being eligible for admission to the Graduate School and meeting the following specific criteria:

Licensure Track:

- Represent a teaching field identified as a critical area of need: Agriculture (6-12), Art (PK-12), Biology (6-12), Business (6-12), Chemistry (6-12), Earth & Space Science (6-12), English (6-12), Family & Consumer Sciences (6-12), Journalism (6-12), Mathematics (6-12), Modern Language (PK-12), Music (PK-12), PE/Health (PK-12), Physics (6-12), Social Studies (6-12), and Speech and Theatre (6-12)
- Meet all undergraduate content requirements (or equivalent) for subject in which licensure is sought (most subject areas require additional content hours);
- Possess a baccalaureate (or equivalent) in the subject area in which licensure is sought;
- Receive the support, through personal interview, of at least one member of the faculty sponsoring the Graduate Certificate;
- Have documented experiences working with youth.

Prior to application, you must first meet with the Licensure Officer to determine your eligibility for the certificate and your faculty content advisor.

Official application to the certificate occurs when you begin the completion of any required undergraduate coursework, and have met with the Licensure Officer and your faculty content advisor.

Non-Licensure Track:

- Represent the field of ESL/EFL education (Grades PK-16).
- Possess a baccalaureate (or equivalent) in education.
- Receive the support, through personal interview, of at least one member of the faculty sponsoring the Graduate Certificate.

Prior to application, you must first meet with your faculty content advisor.

Official application to the certificate occurs when you begin the completion of required coursework and have met with your faculty content advisor.

Application

Students seeking this certificate must submit a Graduate School application indicating the field of study will be the Teaching and Learning graduate certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants need to submit the following:

- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework.
- A statement of objectives explaining the goals and purposes for seeking this graduate certificate.
- Three letters of recommendation.

Students seeking this certificate and who need financial aid should apply to the Master's in Curriculum and Instruction (M.S.) program.

Curriculum

Licensure Track:

Block I (9 credit hours)

- EDCI 702 - Curriculum, Instruction, and Assessment **Credits: 3**
OR
- MUSIC 810 - Curriculum Development and Learning Assessment **Credits: 3**
- EDCI 715 - Literacy and Diverse Learners in the Content Areas **Credits: 3**
- EDSP 711 - Characteristics of Exceptionalities **Credits: 3**

Block II (6-7 credit hours)

Foundations, one of the following:

- EDCI 812 - History of Education **Credits: 3**
OR
 - EDCI 813 - Comparative Philosophies of Education **Credits: 3**
OR
 - MUSIC 807 - History and Philosophy of Music Education **Credits: 3**
- Content Area Teaching Methods, one of the following:
- EDCI 703 - MAT Secondary Math Methods **Credits: 3**
Or
 - EDCI 704 - Science Methods and Practicum for Teaching and Learning **Credits: 3**
Or
 - EDCI 705 - MAT Social Studies Methods **Credits: 3**
Or
 - EDCI 706 - MAT Secondary English/Language Arts **Credits: 3**
Or
 - EDCI 707 - FACS Methods and Practicum for Teaching and Learning **Credits: 3**
Or
 - EDCI 708 - Business Methods and Practicum for Teaching and Learning **Credits: 3**
Or
 - EDCI 709 - Agricultural Education Methods and Practicum for Teaching and Learning **Credits: 3**
Or
 - EDCI 711 - Art Methods and Practicum for Teaching and Learning **Credits: 3**
Or
 - EDCI 712 - MAT Foreign Language Methods **Credits: 3**
Or
 - EDCI 724 - Fundamentals of Teaching Music **Credits: 1**
and
 - EDCI 725 - Music Methods for Elementary Schools **Credits: 1**

- and
- EDCI 726 - Music Program in Middle and Secondary Schools **Credits: 1**
- and
- EDCI 727 - Advanced Methods in Music Education **Credits: 1**

Block III (4 credit hours)

- EDCI 801 - Internship in K-12 Schools **Credits: 1-4**

Non-Licensure Track:

The non-licensure track consists of two "blocks" of course work. The order in which Block I courses are completed may vary. However, all Block I courses must be completed prior to enrolling in the Block II Internship semester.

Block I (15 credit hours)

- EDCI 718 - Introduction to Educational Technology **Credits: 3**
- EDCI 845 - ELD/Dual Language Methods **Credits: 3**
- EDCI 846 - ELD/Dual Language Culture and Language in Classroom Practice **Credits: 3**
- EDCI 847 - ELD/Dual Language Assessment **Credits: 3**
- EDCI 910 - Multicultural Curriculum Programming **Credits: 3**

Block II (4 credit hours)

- EDCI 991 - Internship in Curriculum and Instruction **Credits: 1-18**

Technology Requirement

Upon admission to the Graduate Certificate in Teaching and Learning, students must have a personal device equipped with keyboard, microphone, and webcam (desktop, laptop, or tablet).

Total Hours Required for Graduate Certificate: 19-20

Master of Arts in Teaching

Master of Arts in Teaching - Elementary (MAT)

The Master of Arts in Teaching (MAT) program is designed for second-career adults who have previously attained a Bachelor's degree and would like to become elementary or secondary teacher. Program completers would earn a Master of Arts in Teaching degree and a recommendation for initial teacher licensure. The MAT has the choice of an elementary track or a secondary track. Candidates for secondary education must have a bachelor's degree in the subject field where licensure is sought.

The program is designed as a cohort model and is delivered exclusively online in 12 months. Each cohort begins with the May intersession. The program provides an alternative pathway to teaching that is not currently available to Kansans or others who live outside a reasonable radius of a university or other teacher education unit.

Application requirements and information about the program can be found in the MAT Handbook at the Master of Arts in Teaching website (<http://coe.ksu.edu/academics/mateaching/index.html>)

Elementary Track

All courses will be delivered online through a cohort model. Until demand justifies additions, one cohort of students will be admitted per year beginning with the May Intersession. All courses are required and there are no electives.

Students will complete a 2-credit-hour practicum (EDCI 800) and a 4-credit-hour teaching internship (EDCI 801). Field experiences will be arranged in accredited elementary schools convenient to students in the program.

Course Requirements

The coursework only option for this program does not require a culminating experience.

May Intersession

- EDCI 710 - Social Foundations of K-12 Education **Credits: 3**
- EDCI 890 - Master's Project **Credits: 1-6**

Summer

- EDCI 702 - Curriculum, Instruction, and Assessment **Credits: 3**
- EDCI 716 - Teaching Diverse Learners **Credits: 3**

Fall

- EDCI 791 - Teaching Science and Mathematics in the Elementary School **Credits: 4**
- EDCI 792 - Teaching Social Studies, Reading, and Literacy in the Elementary School **Credits: 4**
- EDCI 800 - Teaching Practicum **Credits: 1-6**

January Intersession

- EDCI 793 - Teaching Health, Movement, and Fine Arts in Elementary Schools **Credits: 4**

Spring

- EDCI 801 - Internship in K-12 Schools **Credits: 1-4**
- EDCI 760 - Action Research in Education **Credits: 3**

Total Hours Required for Master's: 31-33

Master of Arts in Teaching - Secondary (MAT)

The Master of Arts in Teaching (MAT) program is designed for second-career adults who have previously attained a bachelor's degree and would like to become an elementary or a secondary teacher. Program completers will earn a Master of Arts in

Teaching degree and a recommendation for an initial teacher license. The MAT has the choice of an elementary track or a secondary track. Candidates for secondary education must have a bachelor's degree in the subject field where licensure is sought.

The program is designed as a cohort model and is delivered exclusively online in 12 months. Each cohort begins with the May intersession. The program provides an alternative pathway to teaching that is not currently available to Kansans or others who live outside a reasonable radius of a university or other teacher education unit.

Application requirements and information about the program can be found in the *MAT Handbook* at the Master of Arts in Teaching website (<http://coe.ksu.edu/academics/mateaching/index.html>)

Secondary Track

All courses will be delivered online through a cohort model. Until demand justifies additions, one cohort of students will be admitted per year beginning with the May Intersession. All courses are required and there are no electives.

Applicants must possess an undergraduate degree in the appropriate content field and present a passing score on the content area licensure exam.

Students will complete a 2-credit-hour practicum (EDCI 800) and a 4-credit-hour teaching internship (EDCI 801). Field experiences will be arranged in accredited middle or secondary schools convenient to students in the program.

Course Requirements

The coursework only option for this program does not require a culminating experience.

May Intersession

- EDCI 710 - Social Foundations of K-12 Education **Credits: 3**
- EDCI 890 - Master's Project **Credits: 1-6**

Summer

- EDCI 702 - Curriculum, Instruction, and Assessment **Credits: 3**
- EDCI 716 - Teaching Diverse Learners **Credits: 3**
- EDCI 797 - Secondary Content Field Colloquium I **Credits: 2**
or
- AGED 797 - Agricultural Education Colloquium I **Credits: 2**

Fall

- EDCI 715 - Literacy and Diverse Learners in the Content Areas **Credits: 3**
- EDCI 703 - MAT Secondary Math Methods **Credits: 3**
or
- EDCI 705 - MAT Social Studies Methods **Credits: 3**
or

- EDCI 706 - MAT Secondary English/Language Arts **Credits: 3**
or
- EDCI 712 - MAT Foreign Language Methods **Credits: 3**
or
- AGED 790 - Agricultural Education Methods and Practicum for Teaching and Learning **Credits: 3**

- EDCI 798 - Secondary Content Field Colloquium II **Credits: 2**
or
- AGED 798 - Agricultural Education Colloquium II **Credits: 2**
- EDCI 800 - Teaching Practicum **Credits: 1-6**

Winter Intersession

- EDCI 799 - Secondary Content Field Colloquium III **Credits: 2**
or
- AGED 799 - Agricultural Education Colloquium III **Credits: 2**

Spring

- EDCI 801 - Internship in K-12 Schools **Credits: 1-4**
- EDCI 760 - Action Research in Education **Credits: 3**

Total: 31

Final Project

Information about the Teaching and Learning Portfolio is provided by the College of Education.

Total Hours Required for Master's: 31-33

Master of Science

Curriculum and Instruction (MS)

With an emphasis on trends and recent developments in practice, theory and research, the Master of Science in Curriculum and Instruction was designed to be customizable to a variety of roles within the modern school system for those with a background in education. The learning skills/school improvement concentration was designed to leverage interactive technologies to increase student achievement and teacher retention.

You may choose to complete this program on its own or add an educational technology graduate certificate or reading specialist endorsement, with no additional credits required.

Course Requirements

The M.S. in Curriculum and Instruction requires a minimum of 31 hours of graduate credits. Three hours in each of these core areas is required: curriculum, teaching and learning, diversity, educational technology, and research and scholarship. In addition, at least 15 hours in an area of specialization are required. All students take the Master's Project (1 hr.), while others also take the

Master's Report (2 hours) or the Master's Thesis (6 hours). The requirements for each core area and for each of these specializations are described below.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

A. Curriculum (3 credit hours)

This category addresses all aspects of K-12 curriculum. It is intended that one course in curriculum would address the broad range of these issues.

- The foundations of curriculum (philosophical, historical, psychological, and social foundations; curriculum theory)
- The principles of curriculum (aims, goals, objectives; curriculum design, development, implementation, and evaluation)
- Issues of curriculum (trends and issues; future directions; national standards)

Recommended courses for this core category

- EDCI 803 - Curriculum Development **Credits: 3**
OR a curriculum course approved by the student's advisor and committee.

B. Teaching and learning

This category deals with theoretical, practical, and research-based issues associated with the creation of an environment for effective teaching and learning. The following topics are representative of the issues that might affect the creation of the learning environment:

- Teaching strategies (e.g., direct instruction, cooperative learning)
- Learning theory (e.g., sociocultural theory, schema theory)
- Theory and research into practice
- Instructional planning and design
- Assessment
- Learning environments (organization, management, discipline)
- Standards and practices

One course in teaching and learning may address only one of these issues; one course is not intended to provide a survey of all possible issues that affect the creation of a learning environment.

Recommended courses for this category:

- EDCEP 715 - Principles of Assessment **Credits: 3**
- EDCI 720 - ESL/Dual Language Methods **Credits: 3**
- EDCI 831 - Contemporary Issues in Teaching and Learning **Credits: 3**
- EDCI 862 - Instructional Systems Design **Credits: 3**
- EDCI 882 - Teaching and Learning Models **Credits: 3**
OR a teaching and learning course approved by the student's advisor and committee.

C. Diversity (3 credit hours)

This category addresses the nature of learner differences and the instructional implications of these differences. Teaching students in a pluralistic society entails knowledge of many possible factors that may affect student performance, behavior, and instruction.

Student diversity may be due to factors such as: ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation, or geographical areas. One course in diversity may address several of these issues; but one course is not intended to provide a survey of all possible issues that address the nature of learner differences, the instructional implications of these differences, and the nature of the institution of schooling and biases that may exist.

Recommended courses for this core category:

- EDCI 740 - Culture and Language in Classroom Practice **Credits: 3**
 - EDCI 755 - Multicultural Issues in Teaching **Credits: 3**
 - EDCI 812 - History of Education **Credits: 3**
 - EDCI 813 - Comparative Philosophies of Education **Credits: 3**
 - EDCI 864 - Social/Cultural Issues in Educational Technology **Credits: 3**
- OR a diversity course approved by the student's advisor and committee.

D. Educational technology (3 credit hours)

This category examines:

- Roles that technology, teachers, and learners may take in any educational context
- Ways of integrating technology into teaching and learning
- Issues involved in using technology in K-12 settings

Recommended courses for this category:

- EDCI 718 - Introduction to Educational Technology **Credits: 3**

E. Research and scholarship (3 credit hours)

This category deals with interpreting, using, and conducting research and scholarly activities. Scholarship might include analysis, position papers, essays, research into

practice, and other creative endeavors. Scholarship is broader and more inclusive than research. Research is a form of scholarship.

This category addresses:

- The many forms of scholarship
- Scientific and naturalistic research
- Analysis, interpretation, and application of research and scholarship to improve teaching and learning
- Designing and conducting research and scholarship
- How research relates to practice

It is intended that one course in research and scholarship would address the broad range of these items.

Students must complete the research course before starting the master's degree project, report, or thesis (see category F).

Recommended courses for this category:

- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCI 760 - Action Research in Education **Credits: 3**
OR a research and scholarship course approved by the student's advisor and committee.

F. Project, report, or thesis (1-6 credit hours)

Students must complete a research course in Category E before starting this project, report, or thesis. The results of the research project, report, or thesis are to be reported to the student's supervisory committee in the oral exam in the last semester of the degree program.

Project (1 credit hour)

The objective of the project is to improve the student's own practice. Students select a topic pertinent to their own practice. This project includes the construction of a professional portfolio to represent the student's learning throughout the master's degree program.

- EDCI 890 - Master's Project **Credits: 1-6**

Report (2 credit hours)

A master's report is generally shorter than a thesis, and it may present the results of a more limited investigation. Alternatively, it may review the state of a particular scholarly or scientific problem, or - especially in the case of professional programs or applied disciplines - it may describe a project appropriate to the disciplines.

- EDCI 898 - Master's Report **Credits: 1-18**

Thesis (6 credit hours)

The master's thesis presents the results of an original investigation of a problem or topic approved by the candidate's supervisory committee. Its purpose is to demonstrate the candidate's ability to conduct original research, and to present the results in a form acceptable to the supervisory committee.

- EDCI 899 - Master's Thesis **Credits: 1-18**

G. Area of specialization (15 credit hours)

Students must select one of the following areas of specialization (details for each are on the following pages):

- G1. Elementary/Middle-Level Curriculum and Instruction
- G2. Reading/Language Arts
- G3. The Reading Specialist Endorsement
- G4. Middle Level/Secondary Curriculum and Instruction

- G5. Educational Technology
- G7. English as a Second Language
- G8. Learning Skills/School Improvement
- G9. Mathematics Education
- G10. Civic Education
- G11. World Modern Language

G1. Elementary/middle level curriculum and instruction (15 credit hours)

This specialization is intended for elementary teachers who teach a variety of subjects and middle-level teachers who teach in more than one subject field. Core and elective courses for this specialization are intended to focus on curricular issues of the subjects that elementary/middle level teachers teach (e.g., math, science, social studies, science, language arts, reading).

Recommended courses:

- EDCI 776 - Teaching in Middle Schools **Credits: 3**
 - EDCI 816 - Approaches to Literacy Instruction **Credits: 3**
 - EDCI 820 - Contemporary Issues in Language Arts **Credits: 3**
 - EDCI 821 - Advanced Methods in the Teaching of K-12 Mathematics **Credits: 3**
 - EDCI 834 - Improving Science Teaching **Credits: 3**
- OR other courses approved by the advisor.

G2. Reading/language arts (15 credit hours)

Master's degree candidates may specialize in reading/language arts course without taking the particular courses for the reading endorsement (that endorsement can be obtained with specialization G3). Students may choose any 15 hours of approved elementary/middle level and/or secondary courses that emphasize reading and the language arts. Some of the courses may have prerequisites; see the catalog for that information.

Recommended courses:

- EDCI 715 - Literacy and Diverse Learners in the Content Areas **Credits: 3**
 - EDCI 756 - Tradebooks Across the Curriculum **Credits: 3**
 - EDCI 758 - Reading/Writing Connections **Credits: 3**
 - EDCI 816 - Approaches to Literacy Instruction **Credits: 3**
 - EDCI 820 - Contemporary Issues in Language Arts **Credits: 3**
 - EDCI 840 - Literacy Assessment **Credits: 3**
 - EDCI 841 - Striving Literacy Learners **Credits: 3**
 - EDCI 878 - The Language Arts Curriculum **Credits: 3**
- OR other courses approved by the advisor.

G3. Reading specialist endorsement (15 credit hours)

Special licensure requirements exist for K-12 school teachers of special reading classes in Kansas. In addition to degree certification and teaching experience, a planned sequence of graduate reading courses are required for licensure endorsement. Students seeking this endorsement must hold a valid Kansas Professional teaching license.

Required courses (15 credit hours):

- EDCI 816 - Approaches to Literacy Instruction **Credits: 3**
- EDCI 818 - Theoretical Models of Literacy **Credits: 3**
- EDCI 840 - Literacy Assessment **Credits: 3**
- EDCI 841 - Striving Literacy Learners **Credits: 3**
- EDCI 930 - Leadership in Literacy **Credits: 3**

Required practicum (3 credit hours):

- EDCI 945 - Clinical Practicum in Reading **Credits: 3**

Additional requirements:

After completing the required courses and practicum, the applicant must fulfill these additional requirements to obtain an initial reading specialist license:

1. Hold a currently valid Kansas professional teaching license.
2. Present a score of 165 or above on the Praxis II exam for the Reading Specialist (test number 5302).
3. Hold a masters degree. (It is permitted but not necessary to include the required courses as part of the masters degree.)
4. Have a 3.25 grade point average in graduate coursework.
5. Have recent teaching experience or coursework (i.e., at least one year of teaching or 8 credit hours within the last six years.)

G4. Middle level/secondary curriculum and instruction (15 credit hours)

This specialization is intended for middle-level and secondary teachers who teach in one subject field. This specialization is intended to enhance one's knowledge and skills about their teaching field (e.g., education in math, science, social studies, language arts, family and consumer sciences, agriculture, vocational fields).

- A curriculum course in the teaching field (3 hours)
- Electives (12 hours)
- These courses may relate to the content being taught, the curricular program, or instructional aspects of the teaching field.

G5. Educational Technology (15 credit hours)

This area of specialization focuses – following guidelines prescribed by the Association for Educational Communications and Technology (AECT) – on the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. While K-12 educators constitute its largest audience, this specialization is equally appropriate for those from higher education or corporate/industry backgrounds who want to explore the role of educational and communications technologies in enabling effective teaching and meaningful learning. This specialization also provides a solid foundation for those wishing to pursue a doctoral program in Educational Technology.

Required Foundations Courses

B: Teaching and Learning (3 credit hours)

- EDCI 862 - Instructional Systems Design **Credits: 3**

C: Diversity (3 credit hours)

- EDCI 864 - Social/Cultural Issues in Educational Technology **Credits: 3**

D: Educational Technology (3 credit hours)

- EDCI 718 - Introduction to Educational Technology **Credits: 3**

Area of Specialization Courses

Required (12 credit hours)

- EDCI 863 - Online Teaching and Learning **Credits: 3**
- EDCI 866 - Educational Technology Change Management **Credits: 3**
- EDCI 887 - Educational Technology Proseminar I **Credits: 3**
- EDCI 888 - Educational Technology Proseminar II **Credits: 3**

Electives (select at least 3 credit hours from the following)

- EDCI 826 - Contemporary Technologies in Mathematics Education **Credits: 3**
- Any other Educational Technology centered elective approved by the advisor **Credits: 3**

G7. English as a second language (ESL endorsement) (15 credit hours)

(For students seeking the ESL endorsement, any substituted course must closely address the content of the course it is replacing.)

- EDCI 720 - ESL/Dual Language Methods **Credits: 3**
- EDCI 731 - ESL/Dual Language Linguistics **Credits: 3**
- EDCI 740 - Culture and Language in Classroom Practice **Credits: 3**
- EDCI 742 - ESL/Dual Language Assessment **Credits: 3**
- EDCI 745 - ESL/Dual Language Elementary Practicum **Credits: 3**
- OR
- EDCI 746 - ESL/Dual Language Secondary Practicum **Credits: 3**

G8. Learning Skills/School improvement (15 credit hours)

This area is appropriate for educators who want to develop knowledge and skills to work with others in the school or district on improvement in curriculum and instruction. Course selection should be done with the guidance of an advisor.

- EDCI 991 - Internship in Curriculum and Instruction **Credits: 1-18**
- OR other courses approved by the advisor.

G9. Mathematics Education (15 credit hours)

This area of specialization is designed for teachers who wish to further their understandings of mathematics curriculum, content, and pedagogy. Courses are designed to provide a contemporary perspective on teaching mathematics in K-12 schools.

- EDCI 729 - Middle-Level Mathematics for Teachers **Credits: 3**
- EDCI 821 - Advanced Methods in the Teaching of K-12 Mathematics **Credits: 3**

- EDCI 823 - History of Mathematics Education **Credits: 3**
- EDCI 825 - Research in Mathematics Teaching and Learning **Credits: 3**
- EDCI 826 - Contemporary Technologies in Mathematics Education **Credits: 3**
- EDCI 827 - Theoretical Models of Mathematics Teaching and Learning **Credits: 3**
- EDCI 828 - Assessment in Mathematics Education **Credits: 3**
- EDCI 886 - Seminar in Curriculum and Instruction **Credits: 1-18**
- Other courses may be approved by the advisor. These hours may include up to six hours from the KSU Math Department (e.g., MATH 591, MATH 791).

G10. Civic Education (15 credit hours)

This area of specialization is designed for teachers who wish to further their understandings of civic education curriculum, content, and pedagogy. Courses are designed to provide a contemporary perspective on teaching civic education in K-12 schools.

- EDCI 781 - Teaching the Theoretical Foundations of Constitutional Government **Credits: 1**
 - EDCI 782 - Teaching the Historical Origins of Constitutional Government **Credits: 1**
 - EDCI 783 - Teaching the Development of Constitutional Principles **Credits: 1**
 - EDCI 784 - Teaching the Institutions of Government **Credits: 1**
 - EDCI 785 - Teaching the Bill of Rights **Credits: 1**
 - EDCI 787 - Teaching Citizenship **Credits: 1**
 - EDCI 788 - Teaching the Constitutional Principles of America's Founders. **Credits: 3**
 - EDCI 789 - Methods and Materials in Civic Education **Credits: 3**
 - EDCI 790 - Engaged Citizens: Public Policy Issues and Processes **Credits: 3**
- Or other courses approved by the adviser; these hours may include up to six hours in political science, history, or law.

G.11 World Modern Languages (15 hours)

This area of specialization is designed for teachers who wish to further their understandings of world modern language education curriculum, content, and pedagogy. Courses are designed to provide a contemporary perspective on teaching world modern language education in K-12 schools.

Recommended Courses:

- EDCI 770 - Advanced Approaches in World Lang Ed **Credits: 3**
- EDCI 771 - Assessment in World Language Education **Credits: 3**
- EDCI 772 - Current Trends and Research in World Language Education **Credits: 3**
- EDCI 773 - Contemporary Technology in World Language Education **Credits: 3**
- EDCI 871 - World Language Education Practicum **Credits: 3**

Total Hours Required for Master's: 31

Other Degrees

English as a Second Language Specialty in Elementary/Secondary Education

Please refer to Curriculum and Instruction

Dean of Education

Other Degrees

Endorsement for certification or licensure requiring work beyond the bachelor's degree

The College of Education will recommend for licensure individuals satisfying program requirements for the following: building leader (administrator), district leader (administrator), school counselor, reading specialist, early childhood unified education, and English as a second language (ESL). Licensure recommendations are initiated through the Office of Licensure, 13 Bluemont Hall.

Administrative leadership endorsements

A graduate degree is required for any professional administrative leadership license granted by the state of Kansas. The program required by the College of Education must be completed. A minimum of eight hours from courses required for the administrative leadership license must be earned at K-State before the College of Education may recommend administrative leadership licensure. The educational leadership faculty should be contacted regarding advisement for specific administrative leadership licensure.

There are two Kansas administrative leadership endorsements: the building leadership endorsement for the principalship and the district leadership endorsement for the superintendency, which also covers other positions such as special education director (see special education, below).

Building administrative leadership endorsement

This endorsement is for licensure for the principalship. It includes 36 hours of course work. Many courses required for this endorsement are the same as those required in the M.S. in educational leadership. Students who already have applicable course work from another graduate degree do not need a second degree in order to qualify for the license. Endorsement requirements are listed here.

Initial Building Leadership License* (36 hours)

- EDLEA 801 - Ethical Dimensions of Educational Leadership **Credits: 3**
- EDLEA 810 - Historical and Philosophical Analysis of Leadership in Education **Credits: 3**
- EDLEA 836 - School-Community Relations **Credits: 3**
- EDLEA 886 - Leadership for Special Populations **Credits: (3)**
- EDLEA 886 - Leadership in Assessment Issues **Credits: (3)**
- EDLEA 855 - Administrative Leadership in Curriculum **Credits: 3**
- EDLEA 885 - Technology Leadership for Administrators **Credits: 3**
- EDLEA 819 - Introduction to Education Finance **Credits: 3**
- EDLEA 865 - Administrative Leadership in Staff Development **Credits: 3**
- EDLEA 831 - Educational Law **Credits: 3**
- EDLEA 835 - The Principalship **Credits: 2**
- EDLEA 889 - Practicum in Educational Leadership **Credits: 1-3**
- EDLEA 910 - Educational Human Resource Administration **Credits: 3**

Professional Building Leadership License***

* All initial building leadership license candidates must complete the School Leaders Licensure Assessment through ETS (www.ets.org) and meet a minimum score of 165.

** Students are required to document a minimum of 150 clock hours guided field experience through the formal practicum and other coursework (i.e. additional practicum requirements are imbedded in many courses in the licensure sequence to assist in reaching the 150 clock hour requirement). A written log of practicum activities must be included with the student's final portfolio assessment. Further, see policy on acceptable internship settings.

*** After receiving an initial license, students must complete a one-year supervised internship in an administrative position to earn the professional license.

District administrative leadership endorsement

This endorsement is for licensure for the superintendency. It includes 60 total hours of graduate course work. Much of this same work is also required for building-level leadership licensure. Accordingly, students who already hold a master's degree in educational leadership may apply those degree hours toward this license. The course work for this endorsement is listed below:

Initial District Leadership License (60 total required hours)

Prerequisite to Pursuit of District Leadership License (36* hours)

- Candidates for the initial district leadership license must have a masters degree from an accredited university.
- Candidates must hold a current Kansas building administrative leadership license OR have satisfied the requirements for the Initial Building Leadership License.
- Candidates must have completed the School Superintendent Assessment (through ETS www.ets.org) with a score of 157 or above.

District Leadership (24 hours)

- EDLEA 827 - Political and Community Leadership in Education **Credits: 3**
- EDLEA 830 - Introduction to Educational Facility Planning **Credits: 3**
- EDLEA 834 - Strategies for Educational Change **Credits: 3**
- EDLEA 845 - Leadership for Diverse Populations **Credits: 3**
- EDLEA 801 - Ethical Dimensions of Educational Leadership **Credits: 3**
- EDLEA 901 - The School District Leader **Credits: 3**
- EDLEA 950 - Advanced School Business Management **Credits: 3**
- EDLEA 986 - Advanced Seminars in Educational Leadership **Credits: 1-18**
- EDLEA 902 - District Leader Internship **Credits: 1-3**

Professional District Leadership License****

* Candidates holding degrees from other universities may be required to take additional coursework to total 60 hours beyond the bachelor's degree.

** If the candidate obtained building licensure through Kansas State University and his/her transcript shows completion of EDADL 886 Ethical Dimensions of Leadership during the building license program, this requirement has been satisfied. Otherwise, the requirement applies.

*** Students are required to document a minimum 150 clock hours guided field experience through the formal internship and other coursework (i.e. additional internship requirements are imbedded in many courses in the licensure sequence to assist in reaching the 150 clock hour requirement). Further, see policy on acceptable internship settings.

**** After receiving an initial license, students must complete a one-year supervised internship in an administrative leadership position to earn the professional license.

School counseling endorsements

(The official title of this degree approved by the Board of Regents is M.S. in Counseling and Student Development.)

The Master of Science Degree in School Counseling is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). Students who complete the 48-hour program are eligible for school counseling licensure. There are two options for licensure as a school counselor in the State of Kansas. One option is for individuals who have a professional teaching license; the second option, the parallel pathway, is for individuals who do not have a professional teaching license. The parallel pathway option requires additional field experiences over two semesters in schools.

Core requirements (27 hours)

- EDCEP 810 - Mental Health in Schools **Credits: 3**
- EDCEP 822 - Counseling Adolescents **Credits: 3**
- EDCEP 823 - Counseling Theory **Credits: 3**
- EDCEP 852 - Career Development for School Counselors **Credits: 3**
- EDCEP 856 - Counseling Children **Credits: 3**
- EDCEP 857 - Counseling Program Management **Credits: 3**
- EDCEP 871 - Leadership, Advocacy, and Consultation for Counselors **Credits: 3**
- EDCEP 824 - Development Across the Lifespan for School Counselors **Credits: 3**
- EDCEP 951 - Multicultural Counseling **Credits: 3**

Research and appraisal requirements (9 hours)

- EDCEP 715 - Principles of Assessment **Credits: 3**
- EDCEP 815 - Using Tests in Counseling **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**

Clinical Requirements (12 hours)

- EDCEP 858 - Group Processes **Credits: 3**
- EDCEP 877 - Practicum in Counseling **Credits: 3**
- EDCEP 887 - Counseling Internship **Credits: 1-3**
(6 hours of EDCEP 887 required)

Reading Specialist Endorsement (18 hours)

Special licensure requirements exist for K-12 school teachers of special reading classes in Kansas. In addition to degree certification and teaching experience, a planned sequence of graduate reading courses are required for licensure endorsement. Students seeking this endorsement must hold a valid Kansas Professional teaching license.

Required courses (15 hours)

- EDCI 816 - Approaches to Literacy Instruction **Credits: 3**
- EDCI 818 - Theoretical Models of Literacy **Credits: 3**
- EDCI 840 - Literacy Assessment **Credits: 3**
- EDCI 841 - Striving Literacy Learners **Credits: 3**
- EDCI 930 - Leadership in Literacy **Credits: 3**

Required Practicum (3 hours)

- EDCI 945 - Clinical Practicum in Reading **Credits: 3**

Additional Requirements

After completing the required courses and practicum, the applicant must fulfill these additional requirements to obtain a conditional reading specialist license:

1. Hold a valid professional teaching license.
2. Present a score of 560 or above on the Praxis II exam for the Reading Specialist (test number 0300).
3. Hold a masters degree. (It is permitted but not necessary to include the required courses as part of the masters degree.)

Special education endorsements

Endorsements can be in one or more of the following areas: adaptive or functional special education. The endorsement programs for adaptive or functional special education may lead to a master's degree. Specific requirements for these endorsement areas are included in the description for the M.S. in special education. At least half of the credits required for special education endorsement must be earned at K-State, including at least one major course and one practicum, before the College of Education may recommend for special education endorsement.

The special education endorsement can be granted to a person who holds a valid Kansas teaching license for the level (i.e., elementary, or secondary) of special education preparation. Contact the department of special education, counseling and student affairs for information about provisional endorsement.

Teaching endorsement for adaptive special education elementary and/or secondary

Prerequisites

Eligible for licensure in elementary or secondary education, and one of the following courses:

Required courses for elementary and secondary (39 hours)

- EDCEP 715 - Principles of Assessment **Credits: 3**
- EDSP 742 - Intensive Interventions for Students with Emotional Disability **Credits: 3**
- EDSP 743 - Intensive Interventions for Students with Dyscalculia and Other Math Difficulties **Credits: 1-3**
- EDSP 745 - The Consulting Process in Special Education **Credits: 3**

- EDSP 777 - Social Emotional Learning and Behavior Management Strategies **Credits: 3**
- EDSP 778 - Technology for Special Education **Credits: 3**
- EDSP 785 - Practicum I **Credits: 1-3**
- EDSP 830 - Assessment in Special Education **Credits: 3**
- EDSP 848 - Transitions in Special Education **Credits: 3**

Required course for Secondary

- EDSP 844 - Special Education in Secondary Schools **Credits: 2**

Teaching endorsement for functional special education elementary and/or secondary

Prerequisites

Eligible for certification in elementary or secondary education, and one of the following courses:

Required courses (48 hours)

- EDCEP 715 - Principles of Assessment **Credits: 3**
- EDSP 742 - Intensive Interventions for Students with Emotional Disability **Credits: 3**
- EDSP 743 - Intensive Interventions for Students with Dyscalculia and Other Math Difficulties **Credits: 1-3**
- EDSP 745 - The Consulting Process in Special Education **Credits: 3**
- EDSP 777 - Social Emotional Learning and Behavior Management Strategies **Credits: 3**
- EDSP 778 - Technology for Special Education **Credits: 3**
- EDSP 785 - Practicum I **Credits: 1-3**
- EDSP 830 - Assessment in Special Education **Credits: 3**
- EDSP 841 - Interventions: Low Incidence Special Education **Credits: 3**
- EDSP 848 - Transitions in Special Education **Credits: 3**
- EDSP 849 - Interventions: Autism Spectrum Disorders **Credits: 3**
- EDSP 885 - Practicum in Education of Individuals with Low Incidence Special Education Needs **Credits: 1-6**

English as second language (ESL) endorsement

Completion of the following five courses meets requirements for ESL endorsement through Kansas State University. Students enroll in one course per semester; each is offered for three hours of graduate or undergraduate credit. The courses in the endorsement are:

- EDCI 720 - ESL/Dual Language Methods **Credits: 3**
- EDCI 731 - ESL/Dual Language Linguistics **Credits: 3**
- EDCI 740 - Culture and Language in Classroom Practice **Credits: 3**
- EDCI 742 - ESL/Dual Language Assessment **Credits: 3**
- EDCI 745 - ESL/Dual Language Elementary Practicum **Credits: 3**

OR

- **EDCI 746 - ESL/Dual Language Secondary Practicum Credits: 3**
Endorsement in many states, including Kansas, also requires a passing score on a Praxis exam.

Educational Leadership

Royce Ann Collins, Chair

363 Bluemont Hall
785-532-5535
Fax: 532-7304
edlea@k-state.edu
<http://coe.k-state.edu/edlea/>

Admission

For admission requirements, please see the Education catalog page.

Program description

The Department of Educational Leadership offers several degrees within three programs: educational leadership, adult learning and leadership, and community college leadership. Courses leading to the Master's degree and Ed.D. degree in Educational Leadership may also lead to licensure as a building administrator (principal) or a district administrator (superintendent). Other leadership positions in educational organizations are also enhanced by masters and/or doctoral degrees in educational leadership.

Three degrees are offered within the adult learning and leadership program, including: (1) the Master of Science in Adult Learning and Leadership, designed to prepare practitioners for careers in a variety of adult education and leadership settings; (2) the Ph.D. in Adult Learning and Leadership, designed to prepare scholars for careers in college and university settings; and (3) the Ed.D. in Adult Learning and Leadership, designed to provide advanced education and experience by preparing people for work in business, industry, training, government, health services, community agencies, and careers in two- and four-year colleges and universities. Courses focus on issues related to planning, developing, delivering, or facilitating instruction for adult learners. Courses in the adult learning and leadership education program also support the master's and doctoral degrees in the College of Education. The graduate programs are compatible with a variety of delivery settings where the following specializations and support areas are required or desired: adult and continuing education, extension education, administration and leadership of programs, human resource development, training, community education and development, and institutions, agencies, and organizations that deal primarily with adult needs and education.

The Community College Leadership program offers an Ed.D. degree. This is a cohort program that prepares community college leaders and practitioners. The curriculum focuses exclusively on community college history, philosophy, issues, organization, programs, policy, and leadership.

Doctor of Education

Adult Learning and Leadership (EDD)

The Doctor of Education degree in Adult Learning and Leadership offered through the Educational Leadership graduate program requires a minimum of 90 post-baccalaureate, graduate credit hours. With the approval of the supervisory committee, up to 30 graduate hours earned as part of the Master's degree may be used to satisfy the degree requirements.

Contact information for graduate program coordinator alearnlead@ksu.edu.

Admission Requirements

Applicants must submit unofficial transcripts documenting their bachelor's degree, documenting their master's degree and any other graduate level coursework completed.

- Professional history and goal statement (between 5 and 10 pages in length, double-spaced)
- Resume/curriculum vitae
- Writing sample as defined on this website: <https://coe.k-state.edu/academics/program-areas/adult-learning-leadership/doctoral.html>
- Three professional references with name, institution or company, position and email address

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Required Courses

Students without a master's degree in adult education must take these courses in addition to the 90 credit hours in the doctoral degree, as determined by the supervisory committee.

- EDACE 780 - Introduction to Adult Learning and Leadership **Credits: 3**
- EDACE 790 - Characteristics of the Adult Learner **Credits: 3**
- EDACE 818 - Critical and Social Issues in Adult Learning **Credits: 3**
- EDACE 830 - Program Planning in Adult Learning and Leadership **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**

Required Doctoral Courses

15 hours from the following list:

- EDACE 916 - Foundations of Adult Learning and Leadership **Credits: 3**
- EDACE 960 - Introduction to Doctoral Studies **Credits: 3**
- EDACE 975 - Scholarly Writing **Credits: 3**
- EDACE 980 - The Dissertation Process **Credits: 3**
- EDACE 986 - Advanced Seminars in Adult Learning and Leadership **Credits: 1-18**

Research

Minimum of 15 credit hours from the following list or equivalent as approved by supervisory committee:

- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3**
- EDLEA 948 - Data Representation and Writing in Qualitative Research **Credits: 3**
or quantitative/qualitative research courses taken from other disciplines at K-State and approved by the supervisory committee.

Electives

Select electives appropriate to the area of emphasis that satisfy the minimum 90 credit hours for the program. EDACE prefix, additional quantitative/qualitative research courses or other disciplines at K-State and approved by the supervisory committee.

- EDACE 733 - Practicum in Adult Learning and Leadership **Credits: 1-6**
- EDACE 775 - Readings in Adult Learning and Leadership **Credits: 1-3**
- EDACE 795 - Problems in Adult Learning and Leadership **Credits: 1-18**

Internship

6 required credits.

- EDACE 991 - Internship in Adult Learning and Leadership **Credits: 1-6**

Research

Minimum of 12 hours.

- EDACE 999 - Doctoral Research **Credits: 1-18**

Notes

Residency Requirement: Doctoral students must complete two residency courses on campus. These two EDACE courses will be offered in the summer months in an online and 1-week on-campus intensive format.

Preliminary Exam: The dissertation proposal is the preliminary exam. The written portion is the first three chapters of the dissertation, and the oral defense is conducted at the proposal meeting with the supervisory committee.

Dissertation Requirements: After successfully completing the comprehensive exam, students must enroll in 1 credit hours of dissertation per semester, excluding summer semester, until the dissertation is complete. After minimum number of doctoral research hours listed on program of study are completed, a student must enroll in 1 hour per semester, excluding summer semester, until the dissertation is completed.

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Community College Leadership (EDD)

The Community College Leadership doctorate (Ed.D.) prepares leaders for practical leadership. The curriculum focuses exclusively on community college history, philosophy, issues, organization, programs, policy, and leadership. It is the most community college-centric curriculum ever created by a university. To encourage active and practical learning, the local

community college hosting the cohort serves as a learning laboratory with real-life issues serving as projects and products for course and internship content.

Admission Requirements

Because participants in the Ed.D. degree are often pre-screened or employer-selected, participants are exceptionally qualified even before university admission requirements are applied. The first qualification for cohort admission is often nomination by respective community college employers, making participants clearly singled out for likely advancement upon graduation.

Participants also must satisfy Kansas State University's program-specific criteria to gain admission, as the Department of Educational Leadership will require every program entrant to meet or exceed these standards on a continuous basis:

- Completed application
- Master's degree or higher from a regionally-accredited institution in the U.S. or international institution of higher education recognized by the ministry of education or other appropriate government agency
- Minimum cumulative GPA of 3.00 achieved for all previous graduate coursework
- Official transcripts reflecting all academic work completed at baccalaureate and graduate levels from regionally-accredited institutions of higher education
- Current curriculum vita demonstrating three years of related professional experience
- Personal and professional goal statements
- Three signed letters of recommendation on letterhead from professionals who are familiar with the applicant's academic and leadership potential
- Willingness to participate throughout the program of study as a member of a cohort
- Commitment to successfully completing all courses, internships, and field experiences in a prescribed calendar sequence to earn the Ed.D. degree

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Year 1: Fall

Year 1: Fall

- EDACE 851 - The Historical and Contemporary Community College **Credits: 1**
- EDACE 852 - Field Study: The Historical and Contemporary Community College **Credits: 1**
- EDACE 853 - Access, Equity, and Success **Credits: 2**
- EDACE 854 - Field Study: Access, Equity, and Success **Credits: 1**

Year 1: Spring

- EDACE 861 - Fostering Desired Culture: Fundamentals & Strategies for Org Development **Credits: 2**
- EDACE 862 - Field Study: Organizational Development **Credits: 1**
- EDACE 882 - Introduction to Educational Research **Credits: 2**
- EDACE 883 - Field Study: Educational Research **Credits: 1**

Year 1: Summer

- EDACE 857 - Effective Leadership and Theory **Credits: 4**
- EDACE 858 - Field Study Effective Leadership **Credits: 1**
- EDACE 859 - Effective Leadership Institute **Credits: 1**

Year 2: Fall

- EDACE 855 - Aligning Vision, Planning, and Resources **Credits: 2**
- EDACE 856 - Field Study: Vision, Planning and Resources **Credits: 1**
- EDACE 863 - Creating a Culture of Evidence and Inquiry **Credits: 2**
- EDACE 864 - Field Study Enrollment to Outcomes **Credits: 1**

Year 2: Spring

- EDACE 920 - Educational Value Choices **Credits: 2**
- EDACE 921 - Field Study Ed Value Choices: Access, Equity, and Success **Credits: 1**
- EDACE 922 - Policy Formation and Public Process **Credits: 2**
- EDACE 923 - Field Study Policy and Public Process **Credits: 1**
- EDACE 924 - Effective Governance and Leadership **Credits: 2**
- EDACE 925 - Field Study Governance and Leadership **Credits: 1**

Year 2: Summer

- EDACE 926 - Leadership for Transformation **Credits: 2**
- EDACE 927 - Field Study Leadership for Transformation **Credits: 1**
- EDACE 928 - Designing a Comprehensive Plan for Success **Credits: 2**
- EDACE 929 - Field Study Plan for Success **Credits: 1**

Year 3: Fall

- EDACE 970 - Dissertation Development **Credits: 4**
- EDACE 971 - Field Study Dissertation Development I **Credits: 1**
- EDACE 972 - Field Study: Dissertation Development II **Credits: 1**

Year 3: Spring

- EDACE 991 - Internship in Adult Learning and Leadership **Credits: 1-6**

Year 3: Summer

- EDACE 930 - Implementing Leadership Competencies **Credits: 2**
- EDACE 931 - Field Study (Institute) Leadership Competencies **Credits: 1**
- EDACE 999 - Doctoral Research **Credits: 1-18**

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Credit Hours Required for Doctorate: 90

Educational Leadership (EDD)

Offered by the Educational Leadership graduate program, the Doctor of Education in educational leadership is a professional degree program principally for preparing skilled practitioners. Students who do not already hold a district-level (superintendent) endorsement may tailor course work in their emphasis area to meet that license requirement. Contact the Educational Leadership program for current district license requirements. The student's Ed.D. program is directed by a minimum of four members of the university graduate faculty, including a major professor with substantial expertise in the area of emphasis, two other faculty members with strengths in the area of emphasis, one faculty member outside the student's specialization. Each student's program of study is individualized with the approval of the major professor and the supervisory committee to optimize the student's interests, expertise, and goals.

Admission Requirements

- A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

- Applicants must submit unofficial transcripts documenting their bachelor's degree, documenting their master's degree and any other graduate level coursework completed.
- Professional history and goal statement (1-2 page statement that includes the following information:
- Career and professional goals and aspirations, and how being accepted to the program will benefit the goals and aspirations, Your reasons for seeking this degree, Any research interests, Past and present employment within education or related fields, and Future professional plans.
- Resume/curriculum vitae
- A Completed Ed.D. Admission Standards Form (within the online application)
- Writing sample A scholarly writing sample is required. Please download from this website: <https://coe.k-state.edu/academics/graduate-programs/education-leadership-doctorate/>
- Three professional references with name, institution or company, position and email address
- Interview (as scheduled with the admission committee)

Applications are due by October 1st for Spring semester enrollment and March 1st for Fall semester enrollment.

Contact information for graduate program coordinator: Edleadership@ksu.edu

Dissertation Requirements

Preliminary Exam: The dissertation proposal is the preliminary exam. The written portion is the first three chapters of the dissertation, and the oral defense is conducted at the proposal meeting with the supervisory committee.

After successfully completing the comprehensive exam, students must enroll in 1 credit hours of dissertation per semester, excluding summer semester, until the dissertation is complete. After minimum number of doctoral research hours listed on program of study are completed, a student must enroll in 1 hour per semester, excluding summer semester, until the dissertation is completed.

See doctoral degree program requirements in Graduate Handbook: <https://www.k-state.edu/grad/student-success/graduate-handbook/chapter3.html>

Course Requirements

The Doctor of Education (Ed.D.) in Educational Leadership requires a minimum of 90 post-baccalaureate, graduate credit hours. A master's degree is a requirement for admission and with the approval of the supervisory committee, up to 30 graduate hours earned as part of the master's degree may be used to satisfy the degree requirements. All courses are three credit hours unless otherwise noted.

- Prerequisite: EDCEP 816 - Research Methods in Education **Credits: 3**
or other approved course. Waived if in MS degree.

Required Courses (15 credit hours)

- EDACE 960 - Introduction to Doctoral Studies **Credits: 3**
- EDACE 980 - The Dissertation Process **Credits: 3**
- EDLEA 834 - Strategies for Educational Change **Credits: 3**
- EDLEA 928 - Organizational Leadership in Education **Credits: 3**
- EDLEA 986 - Advanced Seminars in Educational Leadership **Credits: 1-18**

Research Methods Courses (15 credit hours)

Choose from the list below or as approved by supervisory committee.

- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- Advanced Research Methods Concentration **Credits: 9**
Courses approved by supervisory committee.

Area of Emphasis (15 credit hours)

- EDLEA prefix, additional quantitative/qualitative research courses **Credits: 1-15**
- Or other disciplines at K-State as approved by the supervisory committee.

Clinical Experience (minimum 3 credits)

- EDLEA 991 - Doctoral Internship in Educational Leadership **Credits: 1-12**

Research/Dissertation (12 credit hours)

- EDLEA 999 - Research in Educational Leadership **Credits: 1-18**

Total Hours Required for Doctorate: 90

Master's degree Transfer Credits: 30

KSU/WU Collaborative Program Requirements (94 credit hours)

Students with a masters degree may transfer up to 30 hrs as approved by the supervisory committee.

First-level Priority Admissions—School District Leadership (52 credit hours)

- EDCEP 816 - Research Methods in Education **Credits: 3**
(or other approved course)
- EDCEP 817 - Statistical Methods in Education **Credits: 3**
(or other approved course)
- EDLEA 801 - Ethical Dimensions of Educational Leadership **Credits: 3**
- EDLEA 810 - Historical and Philosophical Analysis of Leadership in Education **Credits: 3**
- EDLEA 845 - Leadership for Diverse Populations **Credits: 3**
- EDLEA 986 - Advanced Seminars in Educational Leadership **Credits: 1-18**
(or other approved course)
- EDLEA 991 - Doctoral Internship in Educational Leadership **Credits: 1-12**
- EDLEA 999 - Research in Educational Leadership **Credits: 1-18**

WU Collaborative Transfer (12-18 credit hours)

- EA 595 - Practicum in Education Administration **Credits: 3**

- EA 596 - Human Resource Management **Credits: 3**
- EA 597 - School Planning and Facilities **Credits: 3**
- EA 598 - The District Leader **Credits: 3**

OR

Second-level Priority Admission—Other Leadership Designations

- EA xxx - Appropriate courses as approved by committee **Credits: 12-18**

Total Hours Required for KSU/WU Collaborative Program: 94

Doctor of Philosophy

Adult Learning and Leadership (PHD)

Offered through the Educational Leadership graduate program, the Doctor of Philosophy degree in Adult Learning and Leadership is a minimum 90-credit hour, post baccalaureate program designed to prepare scholars who are committed to a career with responsibilities and requirements associated with college/university faculty membership, corporate training and leadership and/or interest in the development of knowledge, theory, and research. With the approval of the supervisory committee, up to 30 graduate hours earned as part of the Master's degree may be used to satisfy the degree requirements.

Admission Requirements

- Applicants must submit unofficial transcripts documenting their bachelor's degree, documenting their master's degree and any other graduate level coursework completed.
- A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.
- Professional history and goal statement (between 5 and 10 pages in length, double-spaced)
- Resume/curriculum vitae
- Writing sample as defined on this website: <https://coe.k-state.edu/academics/program-areas/adult-learning-leadership/doctoral.html>
- Three professional references with name, institution or company, position and email address

Contact information for graduate program coordinator alearnlead@ksu.edu.

Dissertation Requirements

Course Requirements

Required Academic Courses

Students without a master's degree in adult education must take these courses in addition to the 90 credit hours in the doctoral degree, as determined by the supervisory committee.

- EDACE 780 - Introduction to Adult Learning and Leadership **Credits: 3**
- EDACE 790 - Characteristics of the Adult Learner **Credits: 3**
- EDACE 818 - Critical and Social Issues in Adult Learning **Credits: 3**
- EDACE 830 - Program Planning in Adult Learning and Leadership **Credits: 3**

- EDCEP 816 - Research Methods in Education **Credits: 3**

Required Doctoral Courses

15 credits from the following list:

- EDACE 916 - Foundations of Adult Learning and Leadership **Credits: 3**
- EDACE 960 - Introduction to Doctoral Studies **Credits: 3**
- EDACE 975 - Scholarly Writing **Credits: 3**
- EDACE 980 - The Dissertation Process **Credits: 3**
- EDACE 986 - Advanced Seminars in Adult Learning and Leadership **Credits: 1-18**

Research

Minimum of 15 credit hours from the following list or equivalent as approved by supervisory committee:

- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3**
- EDLEA 948 - Data Representation and Writing in Qualitative Research **Credits: 3**
or quantitative/qualitative research courses taken from other disciplines at K-State and approved by the supervisory committee.

Electives

Select electives appropriate to the area of emphasis that satisfy the minimum 90 credit hours for the program. EDACE prefix, additional quantitative/qualitative research courses or other disciplines at K-State and approved by the supervisory committee.

- EDACE 733 - Practicum in Adult Learning and Leadership **Credits: 1-6**
- EDACE 775 - Readings in Adult Learning and Leadership **Credits: 1-3**
- EDACE 795 - Problems in Adult Learning and Leadership **Credits: 1-18**
- EDACE 991 - Internship in Adult Learning and Leadership **Credits: 1-6**

Doctoral Research

Minimum of 12 hours.

- EDACE 999 - Doctoral Research **Credits: 1-18**

Notes

Residency Requirement: Doctoral students must complete two courses in residence on campus. These two courses will be offered in the summer months in an online and 1-week on-campus intensive format.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Adult Learning Graduate Certificate

Contact: Royce Ann Collins

E-mail: racollin@k-state.edu

This 15-credit hour, online graduate certificate offered by the Department of Educational Leadership emphasizes how adult learning principles and instructional methods can be used to strengthen skills of trainers and educators who provide educational opportunities for adult learners. This program will assist any working professional who would like to expand their skills in the areas of adult curriculum design, learning theories and methods of teaching, and program evaluation.

Students seeking this certificate must submit a Graduate School application indicating the field of study will be the Adult Learning graduate certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants need to submit the following:

- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework.
- A statement of objectives explaining the goals and purposes for seeking this graduate certificate.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

- EDACE 765 - Adult Learners and Integrating Technology into Curriculum **Credits: 3**
- EDACE 785 - Designing Classroom Instruction and Curriculum for Adult Learners **Credits: 3**
- EDACE 790 - Characteristics of the Adult Learner **Credits: 3**
- EDACE 847 - Adult Learning and Motivation **Credits: 3**
- EDACE 875 - Program Evaluation in Adult Learning and Leadership **Credits: 3** (or approved course)

Total Hours Required for Graduate Certificate: 15

Indigenous Education Leadership Graduate Certificate

This 12-credit hour online graduate certificate in Indigenous Education Leadership (IELC) will train leaders to work in American Indian educational contexts. This program is built around a new set of leadership standards produced by the Tribal Education Department's National Assembly (TEDNA), which were approved January 13, 2021 by the TEDNA board.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Students enrolling in the K-State graduate certificate program in Indigenous Education Leadership must be admitted to K-State's Graduate School. A student with a bachelor's degree and a cumulative grade point average of at least 3.0 from a regionally accredited institution can expect to be fully admitted to the certificate program.

Students seeking this graduate certificate must fill out a Graduate School Application Form indicating that the field of study will be the Indigenous Education Leadership Certificate. In addition to the Graduate School Application Form, applicants must submit: (1) official copies of transcripts for all undergraduate and graduate work; and (2) a statement of goals and objectives for seeking this certificate which addresses the applicant's current professional experience and how the Indigenous Education Leadership Certificate will assist in reaching personal or professional goals. This material must be uploaded in the CollegeNet admission system used by the Graduate School. For students already enrolled in a graduate level program: Given that the students will be filling out a Graduate School Application form for their own respective program, they will only need to send the statement of goals (item #2 listed above) to the program coordinator to be reviewed for admission into the certificate program.

Course Requirements

The courses are intended to be taken in the order listed. In accordance with the student's needs and workplace requirements and with approval of the program coordinators, a student may substitute a graduate level equivalent course for EDLEA 730 or EDLEA 740 as long as they are relevant equivalents as it relates to educational leadership and experiences with Indigenous populations. EDLEA 740 - Applied Project in Educational Leadership for Indigenous Populations must be the last course in the sequence.

Required Courses

- EDLEA 710 - Fundamental Histories and Philosophies in Indigenous Education **Credits: 3**
- EDLEA 720 - Self-Determination, Sovereignty, and Systems of Indigenous Education **Credits: 3**

Elective Courses

- EDLEA 730 - Leadership, Advocacy, and Action in Indigenous Education **Credits: 3**
or equivalent as approved by program administrators, such as relevant credit through:
- EDLEA 775 - Readings in Educational Leadership **Credits: 1-3**
- EDLEA 786 - Topics in Educational Leadership **Credits: 1-18**
- EDLEA 795 - Problems in Educational Leadership **Credits: 1-18**

Practicum

- EDLEA 740 - Applied Project in Educational Leadership for Indigenous Populations **Credits: 3**
or other relevant specialty credit related to applied projects or practicum in Indigenous educational contexts

Total Hours Required for Graduate Certificate: 12

Leadership Dynamics for Adult Learners Graduate Certificate

Contact: Royce Ann Collins
E-mail: racollin@k-state.edu

This 15-credit hour graduate certificate, offered by the Department of Educational Leadership, emphasizes relationship skills, leadership, and communication based on adult learning theories and principles.

Students seeking this certificate must submit a Graduate School application indicating the field of study will be the Leadership Dynamics for Adult Learners graduate certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants need to submit the following:

- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework.
- A statement of objectives explaining the goals and purposes for seeking this graduate certificate.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required courses

- EDACE 832 - Interpersonal and Intrapersonal Dynamics in Adult Learning and Leadership **Credits: 3**
- EDACE 835 - Developing Teams and Adult Leaders **Credits: 3**
- EDACE 839 - Experiential Learning and Leadership Dynamics **Credits: 3**

Elective Courses

Select 2 of the following courses:

- EDACE 831 - Teaching and Leading Multigenerations of Adults **Credits: 3**
- EDACE 833 - Digital Leadership Development in Adult Education **Credits: 3**
- EDACE 834 - Leading Adults in a Globalized and Diverse World **Credits: 3**
- EDACE 836 - Group Dynamics in Adult Learning and Leadership **Credits: 3**
- EDACE 837 - Quality Programs and Staff Management in Adult Learning and Leadership **Credits: 3**
- EDACE 867 - Managing Change in Adult Learning and Leadership **Credits: 3**
- EDACE 886 - Seminars in Adult Learning and Leadership **Credits: 1-18**

Total Hours Required for Graduate Certificate: 15

Qualitative Research Graduate Certificate

This 18-credit hour graduate certificate is offered by the Department of Educational Leadership in collaboration with other departments within the College of Education. This certificate was created in response to the demand for trained qualitative researchers at the national and international levels. The need for trained qualitative researchers reflect an interdisciplinary demand, such as those who can work in academia, public health, non-profit sector, business and marketing, amongst others.

This program is suitable for anyone who wants to use qualitative inquiry in their professional spaces. This would include people who want to conduct qualitative inquiry in their scholarly, or scholarly practitioner projects. Students will be introduced to learning qualitative methods from a broad social science perspective so they understand how qualitative research has been taken up in education and other fields. This experience will allow students to make connection between different parts of the inquiry

process, thereby developing a stronger understanding of how to conceptualize, execute, and report projects conducted through qualitative inquiry.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

- EDLEA 838 - Qualitative Research in Education **Credits: 3** or equivalent
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3** or equivalent
- EDLEA 948 - Data Representation and Writing in Qualitative Research **Credits: 3** or equivalent

Elective Courses

6-9 credit hours

- EDLEA 828 - Scholarly Orientation to Graduate Studies **Credits: 3** or equivalent
Can only be used if students choose to write a research interest paper that explores a research interest via qualitative inquiry.
- EDLEA 958 - Case Study in Qualitative Research **Credits: 3** or equivalent
- EDLEA 848 - Understanding Theoretical Frameworks **Credits: 3** or equivalent
- EDLEA 968 - Discourse Analysis **Credits: 3** or equivalent
- EDLEA 988 - Differentiated Research **Credits: 3** or equivalent
- EDLEA 978 - Qualitative Data Management and Analysis Using Nvivo **Credits: 3** or equivalent
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3** or equivalent
- EDLEA 929 - Narrative and Arts-Based Inquiry in Qualitative Research **Credits: 3** or equivalent
- EDCI 760 - Action Research in Education **Credits: 3** or equivalent
- EDCI 920 - Narrative Inquiry in Education **Credits: 3** or equivalent
- **Outside Electives**
- THTRE 862 - Workshop in Playwriting **Credits: 3** or equivalent
- THTRE 880 - Master's Project **Credits: 3** or equivalent
Project in Ethnodrama
- HDFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3** or equivalent
- HDFS 808 - Topics in Applied Family Science **Credits: 1** or equivalent

Optional Courses

Applied project could constitute a completion of a dissertation using qualitative methods. Students who wish to use their completed dissertation using qualitative methods could use a maximum of 3 credit hours to complete this requirement. Certificates will be granted only after the completion of a dissertation.

Students who wish to submit a publishable paper to a refereed journal based on an empirical study, could use 3 credit hours earned from EDLEA 988 - Differentiated Research (Pre-requisite EDLEA 838).

Other ways of submitting a publishable paper to a refereed journal could include, but not limited to, preparing the manuscript as a result of specific coursework, or preparing the manuscript as an independent study with a faculty member, or preparing the manuscript, outside of coursework through the student's own initiative.

Total Hours Required for Graduate Certificate: 18

Social Justice Education Graduate Certificate

The purpose of this 15-credit hour program, offered through the Department of Educational Leadership, is to prepare individuals to integrate theoretical and pedagogical aspects of social justice education in formal and informal educational settings at local, national, and international levels.

Students applying to the K-State Graduate Certificate Program in Social Justice Education (SJE) must be admitted to the K-State Graduate School. A student with a bachelor's degree or in the final year of completing the degree is expected to have a cumulative grade point average of at least 3.0 from an accredited institution to be admitted to the certificate program.

The 15-credit SJE certificate program focuses on the integration of foundational, theoretical, and practical aspects of social justice in educational settings, with social justice education theory-to-practice as central to the program. The certificate is based on the concept that social justice education is an ongoing, contextual process that impacts inequitable social, economic, and political systems through critical examination and intentional advocacy.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

6 credit hours

- EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice **Credits: 3**
- EDACE 817 - Reflective Practice in Social Justice Education **Credits: 3**

Elective Courses

6 - 9 credit hours

- EDACE 750 - Women, Education, Leadership, and Work **Credits: 3**
- EDACE 818 - Critical and Social Issues in Adult Learning **Credits: 3**
- EDACE 822 - International Adult Education and Literacy **Credits: 3**
- EDACE 830 - Program Planning in Adult Learning and Leadership **Credits: 3**
- EDCEP 851 - Multicultural Aspects of Academic Advising **Credits: 3**
- EDCI 721 - Learning Strategies and Study Skills **Credits: 3**
- EDCI 740 - Culture and Language in Classroom Practice **Credits: 3**
- EDCI 755 - Multicultural Issues in Teaching **Credits: 3**
- EDCI 910 - Multicultural Curriculum Programming **Credits: 3**
- EDLEA 801 - Ethical Dimensions of Educational Leadership **Credits: 3**
- EDLEA 834 - Strategies for Educational Change **Credits: 3**

- EDLEA 845 - Leadership for Diverse Populations **Credits: 3**

Elective Courses from Other Colleges

Courses approved for program on a case-by-case basis. 0 – 3 credits. Examples are:

- GWSS 605 - Social Change Field-Experience **Credits: 3**
- PSYCH 556 - Multicultural Psychology **Credits: 3**
- PSYCH 563 - Gender Issues in the Workplace **Credits: 3**
- ANTH 613 - Gender, Power, and International Development **Credits: 3**
- ANTH 615 - Race and Culture **Credits: 3**
- SOCIO 541 - Wealth, Power, and Privilege **Credits: 3**
- SOCIO 635 - Sociology of Human Trafficking **Credits: 3**
- SOCIO 851 - Sociology of Development **Credits: 3**
- GERON 777 - Advanced Policy & Advocacy in Gerontology **Credits: 3**
- CNRES 752 - Culture and Conflict **Credits: 3**
- CNRES 761 - International Conflict & Trauma **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Master of Science

Adult Learning and Leadership (MS)

The Master of Science in Adult Learning and Leadership is offered through the Educational Leadership graduate program.

Course Requirements

Required Courses (15 credit hours)

- EDACE 780 - Introduction to Adult Learning and Leadership **Credits: 3**
- EDACE 790 - Characteristics of the Adult Learner **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**
or approved equivalent
- EDACE 818 - Critical and Social Issues in Adult Learning **Credits: 3**
- EDACE 830 - Program Planning in Adult Learning and Leadership **Credits: 3**

Elective Courses (18 credit hours)

Students select 18 hours approved by the student's supervisory committee that can include:

- EDACE 750 - Women, Education, Leadership, and Work **Credits: 3**
- EDACE 786 - Topics in Adult Learning and Leadership **Credits: 1-3**
- EDACE 815 - Introduction to Community Educational Development **Credits: 3**
- EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice **Credits: 3**
- EDACE 825 - Theory and Practice of Continuing Education **Credits: 3**

- EDACE 850 - Self-Directed Learning **Credits: 3**
- EDACE 860 - Innovative Higher Education Programs for Adults **Credits: 3**
- EDACE 865 - Principles of Workplace Learning **Credits: 3**
- EDACE 875 - Program Evaluation in Adult Learning and Leadership **Credits: 3**
- EDACE 817 - Reflective Practice in Social Justice Education **Credits: 3**
- EDACE 886 - Seminars in Adult Learning and Leadership **Credits: 1-18**
- EDACE 937 - Organization and Administration of Adult Learning and Leadership **Credits: 3**

Individualized Courses (may be used as electives)

(Students may take no more than 6 hours of individualized coursework as electives. Practicum coursework cannot exceed 3 credit hours.)

- EDACE 733 - Practicum in Adult Learning and Leadership **Credits: 1-6**
- EDACE 775 - Readings in Adult Learning and Leadership **Credits: 1-3**
- EDACE 795 - Problems in Adult Learning and Leadership **Credits: 1-18**

Note

Program will accept 12 hours transfer from the U.S. Army Command and General Staff College (CGSC) for students attending CGSC.

Total Hours Required for Master's: 33

Educational Leadership (MS)

The Master of Science degree in Educational Leadership is a 30-credit hour professional degree program aligned with the NELP (2018) Standards (Building Level). The program is designed for students who intend to assume significant leadership roles in P-12 school settings not requiring professional leadership licensure or for those who would like to pursue building level licensure. Students who desire a Kansas building-level (principal) license should select this degree program. Students should contact the Department of Educational Leadership for specific license requirements.

Admission Requirements

The application must include:

- Statement of objectives: State your academic objectives in one to two pages and include the following information:
 - career and professional goals and aspirations and how being accepted to the program will specifically benefit your goals and aspirations
 - description of relevant professional experience within education or a related field
 - future professional plans
 - resume/curriculum vitae
- Official transcripts from each college or university where you received your bachelor's degree(s) and completed any post-baccalaureate coursework or degrees
- Two letters of recommendation from college or university educators and/or colleagues or supervisors who are qualified to address your professional skills and your potential for success in the graduate program
- A completed Admissions Standards Self-Survey (located within the application). A score of level 3 or higher is required for admission.

Contact information for graduate program coordinator: edleadership@ksu.edu

Course Requirements

Required Courses: 30 credit hours

- EDLEA 801 - Ethical Dimensions of Educational Leadership **Credits: 3**
- EDLEA 810 - Historical and Philosophical Analysis of Leadership in Education **Credits: 3**
- EDLEA 819 - Introduction to Education Finance **Credits: 3**
- EDLEA 820 - Data Literacy/Data Informed Decisions in Educational Leadership **Credits: 3**
- EDLEA 831 - Educational Law **Credits: 3**
- EDLEA 835 - The Principalship **Credits: 2**
- EDLEA 836 - School-Community Relations **Credits: 3**
- EDLEA 855 - Administrative Leadership in Curriculum **Credits: 3**
- EDLEA 860 - Inclusive School Culture in Educational Leadership **Credits: 3**
- EDLEA 870 - Educational Professional Learning and Human Resources in Educational Leadership **Credits: 3**
- EDLEA 889 - Practicum in Educational Leadership **Credits: 1-3**

Total Hours Required for Master's: 30

Notes:

See master degree program requirements in Graduate Handbook <https://www.k-state.edu/grad/student-success/graduate-handbook/chapter2.html>

Special Education, Counseling, and Student Affairs

Stephen Craig, Chair

Christy Craft, Director of graduate studies

363 Bluemont Hall
785-532-5541
Fax: 532-7304
ccraft@ksu.edu
<http://coe.ksu.edu/secsa/>

Admission

For admission requirements, please see the College of Education catalog page.

Doctor of Education

Special Education (EDD)

The Special Education Ed.D. program, offered through Special Education, Counseling, and Student Affairs, is directed by a minimum of five members of the university graduate faculty, including a major professor with substantial expertise in the area of

emphasis, two other faculty with strengths in the area of emphasis, one faculty member outside the student's specialization, and one faculty member, appointed by the Dean of the Graduate School, from another department within the College of Education who serves as the chair of the examination committee for the oral defense of the dissertation.

Each student's program of study is individualized with the approval of the major professor and the supervisory committee to optimize the student's interests, expertise, and professional goals.

Admission Requirements

A minimum of 90 semester hours beyond the baccalaureate degree.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Dissertation Requirements

Completion of a dissertation which treats an important topic of professional education practice using a systematic methodology consistent with accepted research paradigms; the dissertation must be successfully defended in a public, oral defense. 12 credit hours

Course Requirements

Foundations: 12 credit hours

Required courses in foundations include these areas: historical and philosophical analysis of educational ideas and practice; techniques and interpretation of educational research; social science explanations of educating a diverse society; and psychological bases of educational thought and practice. Each of these courses or their equivalent must be completed:

- EDLEA 810 - Historical and Philosophical Analysis of Leadership in Education **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCI 910 - Multicultural Curriculum Programming **Credits: 3**

Research: 6 credit hours

Research courses are required which concern methodology consistent with that required for the dissertation.

Clinical experience: 12 credit hours

The clinical experience is designed to enhance one's professional development by providing field-based exposure to the process of administration and supervision of special education programs and personnel. The objectives, activities, and outcomes for this clinical experience/internship are commonly determined by the major professor (advisor), in consultation with the student advisory committee.

Area of emphasis: 48 credit hours minimum

Preliminary examination requirement

Satisfactory completion of all segments of a monitored, written examination of at least 12 hours over all areas of the program of study, 3 of which must be over the foundation courses.

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Doctor of Philosophy

Counseling and Student Development - Counselor Education and Supervision (PHD)

The Special Education, Counseling, and Student Affairs graduate program offers a Doctor of Philosophy in Counseling and Student Development with an emphasis in Counselor Education and Supervision. The program requires a minimum of 96 hours post baccalaureate. Training extends beyond that found in the entry-level, basic master's program. The doctoral program addresses the professional leadership roles in counselor education, supervision, advanced counseling practice, and research competencies. The program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

Admission Requirements

Course Requirements

Professional Courses (24 credit hours)

- EDCEP 821 - Fundamentals of Program Evaluation **Credits: 3**
- EDCEP 953 - Multicultural and Social Justice Issues in Counselor Education **Credits: 3**
- EDCEP 955 - Legal and Ethical Issues in Counseling **Credits: 3**
- EDCEP 957 - Teaching and Learning in Counselor Education **Credits: 3**
- EDCEP 958 - Advanced Group Counseling **Credits: 3**
- EDCEP 962 - Leadership and Advocacy in Counselor Education and Supervision **Credits: 3**
- EDCEP 967 - Appraisal and Psychopathology **Credits: 3**
- EDCEP 985 - Advanced Counseling Theory **Credits: 3**

Cognate Area (6 credit hours)

Students will develop an area of focus constructed of courses outside of the department planned with concurrence of the committee.

Research Courses (12 credit hours)

- EDCEP 817 - Statistical Methods in Education **Credits: 3**

- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3**

Practicum/Internship (12 credit hours)

- EDCEP 977 - Advanced Counseling Practicum **Credits: 3**
- EDCEP 987 - Counseling Supervision Practicum **Credits: 3**
- EDCEP 991 - Internship in Counseling and Educational Psychology **Credits: 1-18**

Research (12-15 credit hours)

- EDCEP 999 - Doctoral Research **Credits: 1-18**

Program Total Credits: 66

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 96

Counseling and Student Development - Leadership in Academic Advising (PHD)

Offered through the Special Education, Counseling, and Student Affairs graduate program, the PhD in Counseling and Student Development with specialization in Leadership in Academic Advising requires a minimum of 90 hours post baccalaureate. The doctoral program prepares professionals for roles in leadership, research, and teaching focused on academic advising in higher education.

Admission Requirements

Course Requirements

Doctoral degree requirements

A designated core of 6 hours of graduate credit is required. These courses may be part of a master's degree or must be completed in addition to the doctoral course work. These courses include the following:

- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCEP 851 - Multicultural Aspects of Academic Advising **Credits: 3**
- Or
- EDCEP 830 - Diversity in Higher Education. **Credits: 3**

1. Professional Courses (18 credit hours)

- EDCEP 923 - Higher Education Law **Credits: 3**
- EDCEP 925 - Higher Education Finance **Credits: 3**

- EDCEP 926 - Enrollment Management in Higher Education **Credits: 3**
- EDCEP 927 - Higher Education Administration **Credits: 3**
- EDCEP 948 - Advanced Student Development Theory in College Student Affairs **Credits: 3**
- EDLEA 828 - Scholarly Orientation to Graduate Studies **Credits: 3**

2. Academic Advising Professional Courses (9 credit hours)

- EDCEP 930 - Approaches to Academic Advising: Linking Theory, Research, and Practice **Credits: 3**
- EDCEP 932 - Ethical Issues and Practice in Academic Advising **Credits: 3**
- EDCEP 937 - Administration of Academic Advising **Credits: 3**

3. Research Courses (15 credit hours)

- EDLEA 988 - Differentiated Research **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDCEP 934 - Research in Academic Advising **Credits: 3**

4. Dissertation Research (18 credit hours)

Preliminary examination. Candidates must successfully complete an examination of areas of the program of study.

- EDCEP 999 - Doctoral Research **Credits: 1-18**

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Counseling and Student Development - Student Affairs in Higher Education (PHD)

Offered through the Special Education, Counseling, and Student Affairs graduate program, the Ph.D. in Counseling and Student Development with specialization in Student Affairs in Higher Education requires a minimum of 90 hours of post baccalaureate.

Admission Requirements

Course Requirements

Doctoral degree requirements

A designated core of 6 hours of graduate credit, typically a part of the master's degree in college student personnel work, is required. These courses may be part of a master's degree or must be completed in addition to the doctoral course work. These courses include the following:

- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCEP 830 - Diversity in Higher Education. **Credits: 3**
- or
- EDCEP 851 - Multicultural Aspects of Academic Advising **Credits: 3**

1. Professional courses (18 credit hours)

- EDCEP 923 - Higher Education Law **Credits: 3**
- EDCEP 925 - Higher Education Finance **Credits: 3**
- EDCEP 926 - Enrollment Management in Higher Education **Credits: 3**
- EDCEP 927 - Higher Education Administration **Credits: 3**
- EDCEP 948 - Advanced Student Development Theory in College Student Affairs **Credits: 3**
- EDLEA 828 - Scholarly Orientation to Graduate Studies **Credits: 3**

2. Outside area/specialization (9 credit hours)

This specialization is developed in consultation with the major professor and must be approved by the student's program of study committee.

3. Research courses (15 credit hours)

- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3** or another advanced qualitative course approved by program committee
- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- Elective **Credits: 3** - A quantitative or qualitative course approved by program committee

4. Dissertation research (18 credit hours)

Preliminary examination. Candidates must successfully complete a written comprehensive examination prior to advancing to candidacy and gaining formal approval for dissertation work.

- EDCEP 999 - Doctoral Research **Credits: 1-18 (18 credit hours)**

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Academic Advising Graduate Certificate

Contact: Lisa M. Rubin

E-mail: rubin@ksu.edu

Home Page: <https://coe.k-state.edu/academics/certificates/academic-advising.html>

This certificate is offered through the Special Education, Counseling, and Student Affairs graduate program in collaboration with NACADA: The Global Community for Academic Advising, and is available through distance education only. The 15-credit hour program is consistent with standards and guidelines for academic advising programs specified by the Council for the Advancement of Standards (CAS). The courses within the certificate program contribute to the student's knowledge about academic advising strategies, approaches, theories of career and student development, and application to college and university settings. The courses are delivered exclusively in an on-line format.

Admission Requirements

Prospective and current students interested in this certificate must submit a Graduate School application indicating the field of study will be the Academic Advising graduate certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants also submit the following:

- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework with a minimum 3.0 GPA over the last two years of undergraduate study or in graduate coursework.
- 1-2 page statement of goals and professional experience that includes the following information:
 - career and professional goals and aspirations, and how being accepted to the program will benefit the goals and aspirations
 - the reason for interest in seeking the graduate certificate
 - evidence of motivation, leadership, and strong work ethic
 - professional experiences that support application
- Professional resume or curriculum vitae.

Students may apply credits earned through the graduate certificate completion towards a Master of Science in Academic Advising at Kansas State University (which has a separate admissions process).

Course Requirements

Required Courses

- EDCEP 829 - Learning Principles **Credits: 3**
- EDCEP 835 - Foundations of Academic Advising **Credits: 3**
- EDCEP 838 - Student Development Theory **Credits: 3**
- EDCEP 851 - Multicultural Aspects of Academic Advising **Credits: 3**
- EDCEP 863 - Trends in Career Development **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Total hours MUST include between 12 and 20 hours of graduate credit: Graduate Handbook, Chapter 4

College Athlete Development Graduate Certificate

Contact: Lisa M. Rubin

E-mail: rubin@ksu.edu

Home Page: <https://coe.ksu.edu/academics/graduate-programs/college-athlete-development-certificate/>

This 12-credit hour, online graduate certificate offered by the Department of Special Education, Counseling, and Student Affairs emphasizes how professionals can strengthen knowledge and skills to provide educational and holistic development opportunities for college athletes. This program will assist anyone who would like to expand their skills in the areas of athletic advising, college athlete holistic development, and the ever-changing landscape of college athletics covering topics such as name-image-likeness, athlete mental health and wellbeing, and conference realignment.

Students may apply credits earned through the graduate certificate completion towards a Master of Science in College Student Development at Kansas State University (which is an on-campus program and has a separate admissions process).

Admission Requirements

- Prospective and current students interested in this certificate must submit a Graduate School application indicating the field of study will be the College Athlete Development graduate certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants also submit the following:
- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework with a minimum 3.0 GPA over the last two years of undergraduate study or in graduate coursework
- 1-2 page statement of goals and professional experience that includes the following information:
 - career and professional goals and aspirations, and how being accepted to the program will benefit the goals and aspirations
 - the reason for interest in seeking the graduate certificate
 - evidence of motivation, leadership, and strong work ethic
 - professional experiences that support application
- Professional resume or curriculum vitae.

Course Requirements

Required Courses

- EDCEP 837 - Individualized Learning Experience in Higher Education **Credits: 3**
- EDCEP 854 - College Student Athletes **Credits: 3**
- EDCEP 863 - Trends in Career Development **Credits: 3**
- EDCEP 864 - Current Issues in Intercollegiate Athletics **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Teaching Students With Autism Spectrum Disorders Graduate Certificate

Contact: Marilyn Kaff

E-mail: mkaff@ksu.edu

Offered through the Special Education, Counseling, and Student Affairs graduate program, the central goal of the certificate program in autism is to provide special education teachers with understanding and skills to provide special education programs for students with autism. Specifically, students will learn the characteristics and causes of autism, identification and assessment

procedures, effective educational interventions, program delivery and transition approaches. In addition, students will participate in an advanced practicum under the supervision of a university supervisor and qualified cooperating teacher.

The autism certificate program extends the training of graduate students who have either already completed a M.S. degree in special education or who are currently enrolled in the M.S. program in special education at KSU and wish to add the autism certificate.

Students seeking this certificate must submit a Graduate School application indicating the field of study will be the Teaching Students with Autism Spectrum Disorders graduate certificate program. This is a separate application from the one for admission into a master's degree. In addition to the Graduate School application, applicants need to submit the following:

- An official transcript for the bachelor's degree and for any subsequent undergraduate and graduate coursework.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

- EDSP 841 - Interventions: Low Incidence Special Education **Credits: 3**
- EDSP 849 - Interventions: Autism Spectrum Disorders **Credits: 3**
- EDSP 885 - Practicum in Education of Individuals with Low Incidence Special Education Needs **Credits: 1-6**

*Note: EDSP 885 must be taken for 3 credit hours

- EDSP 889 - Advanced Practicum: Autism Spectrum Disorders **Credits: 1-6**

*Note: EDSP 889 must be taken for 3 credit hours

Total Hours Required for Graduate Certificate: 12

Master of Science

Academic Advising (MS)

The Master of Science in Academic Advising is offered through the Special Education, Counseling, and Student Affairs graduate program for advising professionals and future professional advisors seeking to enhance their knowledge and ability to work more effectively with postsecondary students in their academic and career planning. All courses are offered online, which serves graduate students in Kansas and students both across and outside the country.

The program's conceptual framework emphasizes development of "highly skilled and educated" professional advisors who through their work prepare undergraduates for their future careers. Curricular experiences include interpersonal relations; needs and characteristics of specific groups of students; research methods; learning principles; advising strategies; college student development; career development and multicultural aspects of advising. Students complete 27 hours of core courses and also select one of two 3-credit hour restricted electives.

For more information on Academic Advising go to global.k-state.edu/education/academic-advising/.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses (27 credit hours)

- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCEP 829 - Learning Principles **Credits: 3**
- EDCEP 835 - Foundations of Academic Advising **Credits: 3**
- EDCEP 836 - Interpersonal Relations for Academic Advising **Credits: 3**
- EDCEP 838 - Student Development Theory **Credits: 3**
- EDCEP 851 - Multicultural Aspects of Academic Advising **Credits: 3**
- EDCEP 854 - College Student Athletes **Credits: 3**
- EDCEP 863 - Trends in Career Development **Credits: 3**
- EDSP 853 - College Students with Disabilities **Credits: 3**

Elective Courses (3 hours)

- EDCEP 812 - History and Philosophy of Higher Education **Credits: 3**
- EDCEP 839 - Assessment of Academic Advising **Credits: 3**
- EDCEP 864 - Current Issues in Intercollegiate Athletics **Credits: 3**

Total Hours Required for Master's: 30

Counseling and Student Development - College Student Development (MS)

The Special Education, Counseling, and Student Affairs graduate program offers a Master of Science degree in Counseling and Student Development with an emphasis in College Student Development. This emphasis is designed to prepare the student for work in a college setting at one or many different student affairs agencies and to assist the student to meet the professional entry-level and advancement requirements in the field. A minimum of 39 graduate credit hours are required in the program.

Students complete 33 credit hours of core requirements in addition to 6 credit hours aligned with one of three options. The Student Affairs Administration option is most appropriate for those intending to work in various functional areas in student affairs in higher education. The Social Justice Education option is appropriate for those who wish to pursue a focus on social justice education within their work in higher education settings. The College Athlete Development option is most appropriate for those who want to strengthen their knowledge and skills to provide educational and holistic development opportunities for college athletes.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

(33 credit hours)

- EDCEP 812 - History and Philosophy of Higher Education **Credits: 3**

- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCEP 818 - Principles of Student Affairs Administration **Credits: 3**
- EDCEP 826 - Student Success and Learning in Higher Education **Credits: 3**
- EDCEP 830 - Diversity in Higher Education. **Credits: 3**
- EDCEP 831 - Current Issues in Higher Education **Credits: 3**
- EDCEP 837 - Individualized Learning Experience in Higher Education **Credits: 3**
- EDCEP 838 - Student Development Theory **Credits: 3**
- EDCEP 863 - Trends in Career Development **Credits: 3**
- EDCEP 885 - Practicum in Higher Education **Credits: 3 ***
- EDSP 853 - College Students with Disabilities **Credits: 3**

Notes:

* Must be a degree-seeking student in the M.S. in College Student Development program, have submitted a Program of Study, and have completed at least 18 hours prior to enrolling in EDCEP 885.

Options (Select one)

A. Student Affairs Administration (6 credit hours)

- EDCEP 821 - Fundamentals of Program Evaluation **Credits: 3**
- EDCEP 835 - Foundations of Academic Advising **Credits: 3**
- OR**
- LEAD 701 - Foundations of Leadership **Credits: 3**
- Comprehensive Poster Project

B. Social Justice Education (6 credit hours)

- EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice **Credits: 3**
- EDACE 817 - Reflective Practice in Social Justice Education **Credits: 3**
- Comprehensive Poster Project

C. College Athlete Development (6 credit hours)

- EDCEP 854 - College Student Athletes **Credits: 3**
- EDCEP 864 - Current Issues in Intercollegiate Athletics **Credits: 3**
- Comprehensive Poster Project

Total Hours Required for Master's: 39

Counseling and Student Development - School Counseling (MS)

The Special Education, Counseling, and Student Affairs graduate program offers a Master of Science degree in Counseling and Student Development with an emphasis in School Counseling. The 48 hour program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

The program's conceptual framework emphasizes development of knowledgeable, caring, ethical decision-makers within the context of groups and institutions, client development and learning, guidance and counseling of students leading to theory-driven

and research-guided practice in school counseling. Curricular experiences include human growth and development, appraisal, research and program evaluation, professional orientation, and foundations.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

(27 credit hours)

- EDCEP 810 - Mental Health in Schools **Credits: 3**
- EDCEP 822 - Counseling Adolescents **Credits: 3**
- EDCEP 823 - Counseling Theory **Credits: 3**
- EDCEP 852 - Career Development for School Counselors **Credits: 3**
- EDCEP 856 - Counseling Children **Credits: 3**
- EDCEP 857 - Counseling Program Management **Credits: 3**
- EDCEP 871 - Leadership, Advocacy, and Consultation for Counselors **Credits: 3**
- EDCEP 824 - Development Across the Lifespan for School Counselors **Credits: 3**
- EDCEP 951 - Multicultural Counseling **Credits: 3**

2. Research and appraisal requirements (9 credit hours)

- EDCEP 715 - Principles of Assessment **Credits: 3**
- EDCEP 815 - Using Tests in Counseling **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**

3. Clinical requirements (12 credit hours)

- EDCEP 858 - Group Processes **Credits: 3**
- EDCEP 877 - Practicum in Counseling **Credits: 3**
- EDCEP 887 - Counseling Internship **Credits: 1-3**

Note: 6 total credit hours required for EDCEP 887

Notes

The internship will consist of 600 clock hours under weekly supervision of a licensed school counselor and faculty professor. The student will attend class for group supervision and provide 240 clock hours of direct service in the school setting. Included activities are individual counseling, group work, developmental classroom guidance, and consultation.

Internship arrangements are made by the coordinating faculty member when required coursework has been completed and only after submission and approval of a pre-enrollment application, available in 369 Bluemont Hall. Both the coordinating faculty member and the student's committee must approve enrollment.

Total Hours Required for Master's: 48

Special Education (MS)

Kansas State University prepares special education teachers at the graduate level in a cross categorical program with two areas of specialization: high incidence special education and low incidence special education. These programs have been approved for special education endorsement by the Kansas State Department of Education (KSDE).

Students pursuing a master's degree in special education are required to complete requirements for full endorsement in at least one area of specialization. However, when feasible, it is advisable to plan programs leading to endorsement in more than one specialization area.

Kansas Endorsement Requirements

Each area of specialization has a separate course sequence designed by the College of Education and approved by the Kansas State Board of Education (KSBE) and the National Council for the Accreditation of Teacher Education (NCATE). The special education endorsement can be granted to a person who holds a valid Kansas teaching license.

Special education endorsement can be met without completion of the master's degree. However, most students choose to complete the master's degree while working toward endorsement. Completing the master's degree is recommended by the special education faculty. Students who intend to complete a master's degree should apply for admission to the master's program before completing nine hours of graduate coursework.

Full Endorsement

Full endorsement is granted to the applicant by the State Department of Education upon completion of the required sequence of courses.

Provisional Endorsement

Provisional endorsement is possible in the High Incidence area.

For provisional endorsement, a candidate must complete a specified sequence of courses, including a practicum. Provisional endorsement is for a two (2) year period, and may be renewed for an additional two year period. At the time of renewal, the candidate must have completed 50% of the courses remaining for full endorsement. The entire sequence of courses for full endorsement must be completed within four years.

Courses Required for Provisional Endorsement in Special Education

- EDSP 742 - Intensive Interventions for Students with Emotional Disability **Credits: 3**
- EDSP 743 - Intensive Interventions for Students with Dyscalculia and Other Math Difficulties **Credits: 1-3**
- EDSP 785 - Practicum I **Credits: 1-3**

Practicum and Provisional Endorsement

1. You must be admitted to the M.S. Program in Special Education prior to the semester you request your first practicum, unless you are completing your first practicum as part of either the undergraduate Quickstart or Step Ahead programs.
2. You must contact the professor in charge of practicum during the semester prior to the semester you are requesting practicum.

3. If you are considering provisional endorsement, EDSP 711, EDSP 742, and EDSP 743 must be taken prior to your first practicum.
4. You must complete EDSP 830 before registering for a second practicum. (EDCEP 715 is a prerequisite for EDSP 830)
5. You will be required to maintain a comprehensive portfolio that provides evidence of your competence in meeting the requirements of both practica.

Endorsement Policies as Kansas State University

- At least half of the credits required for special education endorsement must be earned at Kansas State University, including at least one major area course and one practicum, before the College of Education may recommend for special education endorsement.
- Teachers are endorsed in special education at the level at which they hold regular teaching certificates. Individuals who hold K-12 certificates in content areas such as music, art, or physical education will need to make up deficiencies in elementary education if they wish to be certified K-12 in special education. Teachers fully certified at the elementary level in special education may add secondary-level certification by completing the secondary-level sequence, including a practicum at that level.
- Teachers are responsible for initiating their own endorsement (Licensing Officer, 013 Bluemont Hall, 785-532-5524).
- Provisional endorsement is not granted until the applicant is employed in a special education position.

Limitations

To be recommended for endorsement, the student must have a 3.0 GPA overall in graduate work and must not receive a grade lower than a B in the 12 hours of core courses (EDSP 742, EDSP 743, and EDSP 785). The above program is subject to change depending on actions taken by the Kansas State Board of Education.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

High Incidence Disabilities: Elementary or Secondary

Prerequisites

Eligible for licensure in elementary or secondary education, and one of the following courses

- EDSP 323 - Exceptional Students in the Secondary School **Credits: 2**
- EDSP 224 - Exceptional Child in the Regular Classroom **Credits: 3**

Required Courses

- EDSP 711 - Characteristics of Exceptionalities **Credits: 3**
- EDSP 742 - Intensive Interventions for Students with Emotional Disability **Credits: 3**
- EDSP 744 - Intensive Interventions for Students with Dyslexia and Other Reading Difficulties **Credits: 1-3**

- EDSP 743 - Intensive Interventions for Students with Dyscalculia and Other Math Difficulties **Credits: 1-3**
- EDSP 745 - The Consulting Process in Special Education **Credits: 3**
- EDSP 777 - Social Emotional Learning and Behavior Management Strategies **Credits: 3**
- EDSP 785 - Practicum I **Credits: 1-3**
- EDSP 800 - Practicum II **Credits: 3**
- EDSP 830 - Assessment in Special Education **Credits: 3**
- EDSP 835 - The IEP Process in Special Education **Credits: 1-3**

Electives

- EDSP 844 - Special Education in Secondary Schools **Credits: 2**
(Required for adding secondary level endorsement to elementary level endorsement and for all secondary special education endorsements. Offered in spring semesters of odd-numbered years.)

Low Incidence Special Education: Elementary or Secondary

All courses required for High Incidence endorsement and:

- EDSP 841 - Interventions: Low Incidence Special Education **Credits: 3**
- EDSP 849 - Interventions: Autism Spectrum Disorders **Credits: 3**
- EDSP 885 - Practicum in Education of Individuals with Low Incidence Special Education Needs **Credits: 1-6** Must be taken for 3 credit hours.

Additional Requirements for a Master's Degree

The above program leads to endorsement in special education. Students wishing to complete the master's degree must complete at least 30 hours of graduate level credit and successfully present their teaching portfolio. Committee members will recommend additional course work based on individual student need. This course work will include but not be limited to: EDSP 886 - Seminar in Special Education or EDCEP 816 - Research Methods in Education.

Total Hours Required for Master's: 30

Other Degrees

School Counseling (EDS)

The Special Education, Counseling, and Student Affairs graduate program offers an Education Specialist degree in School Counseling. The 60-hour program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

The program's conceptual framework emphasizes development of knowledgeable, caring, ethical decision-makers within the context of groups and institutions, client development and learning, counseling of students leading to theory-driven and research-guided practice in school counseling. Curricular experiences include professional orientation, counseling and ethical practice, social and cultural diversity, human growth and development, career development, counseling and helping relationships, group counseling and group work, assessment and testing, research and program evaluation, and foundations.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

51 credit hours

- EDCEP 810 - Mental Health in Schools **Credits: 3**
- EDCEP 815 - Using Tests in Counseling **Credits: 3**
- EDCEP 816 - Research Methods in Education **Credits: 3**
- EDCEP 822 - Counseling Adolescents **Credits: 3**
- EDCEP 823 - Counseling Theory **Credits: 3**
- EDCEP 824 - Development Across the Lifespan for School Counselors **Credits: 3**
- EDCEP 832 - Counseling Techniques **Credits: 3**
- EDCEP 852 - Career Development for School Counselors **Credits: 3**
- EDCEP 855 - Professional Counseling Orientation and Ethical Practice **Credits: 3**
- EDCEP 856 - Counseling Children **Credits: 3**
- EDCEP 857 - Counseling Program Management **Credits: 3**
- EDCEP 858 - Group Processes **Credits: 3**
- EDCEP 860 - Trauma and Crisis Counseling **Credits: 3**
- EDCEP 867 - Counseling Mental Health Disorders **Credits: 3**
- EDCEP 871 - Leadership, Advocacy, and Consultation for Counselors **Credits: 3**
- EDCEP 886 - Seminar in Counseling and Educational Psychology **Credits: 1-18**
- EDCEP 951 - Multicultural Counseling **Credits: 3**

Clinical Requirements

9 credit hours

- EDCEP 877 - Practicum in Counseling **Credits: 3**
- EDCEP 887 - Counseling Internship **Credits: 1-3**
- EDCEP 887 - Counseling Internship **Credits: 1-3**

Note

The internship will consist of 600 clock hours over two semesters in approved school settings (elementary and secondary) arranged by the program coordinator and internship faculty member. A minimum of 240 hours over the two semesters is required for direct service counseling with clients with weekly supervision held by a licensed school counselor and faculty professor. Students attend class for group supervision weekly with an additional one hour for individual supervision. Internship placements are approved only following successful completion of Counseling Practicum and submission and approval of the Internship application.

Total Hours Required: 60

College of Engineering

Carl R. Ice College of Engineering

Matt O'Keefe, Dean

Vacant, Senior Associate Dean

Stacy Hutchinson, Associate Dean for Research and Graduate Programs

Andy Fund, Assistant Dean for Student Services

Craig Wanklyn, Assistant Dean for Recruitment

Amy Betz, Assistant Dean for Retention, Diversity, and Inclusion

1046 Rathbone Hall

785-532-5590

Fax: 785-532-7810

<http://www.engg.ksu.edu/>

The College of Engineering offers doctoral programs leading to the Ph.D. degree in engineering in the following areas: Biological and Agricultural Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering, and Nuclear Engineering. A doctoral program leading to the Ph.D. in Computer Sciences is also offered.

Programs leading to the M.S. degree in all of the above areas are offered. In addition, programs are offered for the M.S. in Operations Research, M.S. in Architectural Engineering, the Master of Software Engineering, and the Master of Engineering Management degrees.

Entering graduate students must meet the entrance requirements of the Graduate School and must have completed the B.S. degree in a field of engineering, computing and information science, or a closely related area of science.

Engineering (PHD)

The College of Engineering offers doctoral programs leading to the Ph.D. degree in engineering in the following areas: Biological and Agricultural Engineering, Chemical Engineering, Civil Engineering, Computer Science, Electrical and Computer Engineering, Industrial Engineering, Mechanical Engineering, and Nuclear Engineering.

Architectural Engineering and Construction Science

GE Johnson Department of Architectural Engineering and Construction Science

Katie Loughmiller, Acting Department Head

Bill Zhang, Graduate Coordinator

2049 Seaton Hall

785-532-5964

Fax: 785-532-3556

arecns@k-state.edu

<http://www.ksu.edu/are-cns/>

The Department

The Department of Architectural Engineering and Construction Science and Management offers courses of study leading to the master of science degree. The undergraduate degree is ABET accreditation (Accreditation Board for Engineering and Technology, Inc.).

The department consists of 16 full-time faculty members. A master of science degree in architectural engineering with specialization in structural engineering, lighting/electrical, and heating and air conditioning for buildings. The research interests of the staff cover major areas of modern building systems design: seismic analysis of buildings, slender wall design, vibration analysis, lighting/electrical, heating and air conditioning, plumbing, cold-formed steel design, green building design, energy analysis, energy auditing, acceptance testing, and indoor air quality. Several faculty members direct research and utilize this research in the enhancement of both graduate and undergraduate teaching. The objective of the program is to provide advanced studies in engineering, analysis and design of all the disciplines in building systems. The department has excellent facilities and access to the most recent computer software technology.

Accelerated

Accelerated Architectural Engineering (BS)/Architectural Engineering (MS)

The accelerated Architectural Engineering (BS)/Architectural Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Architectural Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Architectural Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ARE 722 - Building Loads and Computer Aided Structural Analysis and Design **Credits: 3**
- ARE 723 - Timber Structures **Credits: 3**

- ARE 724 - Advanced Steel Design **Credits: 3**
- ARE 726 - Masonry Structural Design **Credits: 3**
- ARE 729 - Building Seismic Design **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Program Specific Admission Requirements

The applicant must have at least one graduate faculty in the GE Johnson Department of Architectural Engineering and Construction Science agree to serve as the major professor for the applicant and sign the applicant's Major Professor Form.

Master of Science

Architectural Engineering (MS)

The Master of Science in Architectural Engineering is designed to meet the emerging needs of architectural engineering industry and is offered through the Architectural Engineering and Construction Science graduate program. The M.S. degree program is for individuals who have graduated with a bachelor's degree from an ABET accredited engineering program. This professional M.S. degree challenges top students with research experiences, faculty mentoring, and advanced course work. The program allows the student an opportunity to specialize in an emphasis area of systems engineering applied to building design and analysis. Students and faculty are matched by interest and capability to determine an emphasis area, program of study, and graduate committee. Current emphasis areas include: building mechanical systems, building electrical power distribution and illumination, and building structural systems design.

Admission Requirements

Applicants to the MS in Architectural Engineering program shall meet all entrance requirements as stipulated in K-State Graduate Handbook Section 1B. In addition, applicants should have:

- Completed an ABET accredited Bachelor of Science in engineering.
- Been accepted by Architectural Engineering Graduate Faculty.

Course Requirements

A minimum of 30 graduate credits is required for graduation. Students have the thesis option or report option, as stipulated in Section 1A of K-State Graduate Handbook. Eighteen of the 30 credits shall be from 700-800 level ARE courses, including, but not limited to, the following:

- ARE 711 - Building Energy Codes and Standards **Credits: 2**
- ARE 712 - Energy Modeling Lab **Credits: 1**
- ARE 720 - Topics in Architectural Engineering **Credits: 1-18**

- ARE 722 - Building Loads and Computer Aided Structural Analysis and Design **Credits: 3**
- ARE 723 - Timber Structures **Credits: 3**
- ARE 724 - Advanced Steel Design **Credits: 3**
- ARE 725 - Cold-Formed Steel Design **Credits: 3**
- ARE 726 - Masonry Structural Design **Credits: 3**
- ARE 729 - Building Seismic Design **Credits: 3**
- ARE 731 - Advanced Lighting Design **Credits: 3**
- ARE 733 - Advanced Mechanical Hydronic Systems Design **Credits: 3**
- ARE 734 - Advanced Mechanical Air Systems Design **Credits: 3**
- ARE 735 - Advanced Electrical Systems Design **Credits: 3**
- ARE 736 - Advanced Plumbing Design **Credits: 3**
- ARE 741 - Building Communication Systems **Credits: 3**
- ARE 890 - Problems in Architectural Engineering **Credits: 0-18**
- ARE 898 - Master's Report **Credits: 1-18** (2 Credits, Report Option)
- ARE 899 - Master's Thesis **Credits: 1-18** (6 Credits, Thesis Option)

Total Hours Required for Master's: 30

Biological and Agricultural Engineering

Mark R. Wilkins, Head

Aleksey Sheshukov, Director of graduate studies

1016 Seaton Hall

785-532-5418

Fax: 785-532-5825

ashesh@ksu.edu

<http://www.bae.ksu.edu/>

Program description

The Department of Biological and Agricultural Engineering offers courses of study leading to the Master of Science in biological and agricultural engineering, and the Doctor of Philosophy in biological and agricultural engineering.

The department consists of 14 graduate faculty members, about 40 graduate students, and one adjunct graduate faculty member. Master of Science and Doctor of Philosophy students may specialize in (1) environmental engineering, (2) bioprocess engineering, (3) machinery systems, and (4) natural resource engineering. Minimum degree requirements for Master of Science degrees are 30 semester hours of graduate credit, including a Master's thesis of 6 semester hours based upon original research or a master's report of 2 semester hours of research or problem work. Award of a doctorate requires successful completion of 90 semester hours beyond the baccalaureate as well as completion of a major research study reported in a doctoral dissertation. Up to 30 semester hours from a Master of Science degree may be used towards completion of the Doctor of Philosophy degree.

Research facilities

The department is located in Seaton Hall. The department possesses 15 well-equipped instructional and research laboratories, including the computer laboratory, and laboratories for instrument and control, physical properties, image processing, thermal food processing, grain wet processing, air quality and control, water quality and control, hydrology, engine testing, machinery systems, and biomass energy systems. Field studies may be carried out at experiment fields near Topeka and St. John and at

Research Extension Centers near Garden City and Colby. Opportunities also exist for research in the U.S. Grain Marketing and Production Research Center and the Wind Erosion Research Unit, USDA-ARS, both located in Manhattan.

Financial support

Students are admitted into the Biological and Agricultural Engineering graduate program either with an assistantship that pays a stipend from University funds or with their own source of financial support. A limited number of assistantships providing teaching and research experiences are available. Graduate assistant appointments are usually at four-tenths time. Fees are assessed at the same rate as university employees for graduate teaching assistants and graduate research assistants.

Accelerated

Accelerated Biological System Engineering - Biological (BS)/Biological and Agricultural Engineering (MS)

The accelerated Accelerated Biological System Engineering - Biological (BS)/Biological and Agricultural Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biological and Agricultural Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

An entering student must be pursuing a B.S. BSE and have at least a cumulative 3.25 GPA. The student must enroll in this program after completing 80 undergraduate credit hours, but before his/her B.S. degree is awarded.

- At least 18 hours of graduate courses must be at or above the 700 level.
- Graduate courses in the BAE department must be at or above the 600 level.
- Graduate courses outside the department must be at or above the 500 level.
- Continuous enrollment required.
- Two of the following courses must be taken: BAE 815 , BAE 816 , BAE 817 , and/or BAE 818 .

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BAE 626 - Bioseparations **Credits: 3**
- BAE 640 - Instrumentation and Control for Biological Systems **Credits: 3**
- BAE 643 - Life Cycle Assessment **Credits: 3**
- BAE 645 - Bioenvironmental Reaction Engineering **Credits: 3**
- BAE 651 - Air Pollution Engineering **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biological System Engineering - Environmental (BS)/Biological and Agricultural Engineering (MS)

The accelerated Accelerated Biological System Engineering - Environmental (BS)/Biological and Agricultural Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biological and Agricultural Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

An entering student must be pursuing a B.S. BSE and have at least a cumulative 3.25 GPA. The student must enroll in this program after completing 80 undergraduate credit hours, but before his/her B.S. degree is awarded.

- At least 18 hours of graduate courses must be at or above the 700 level.
- Graduate courses in the BAE department must be at or above the 600 level.
- Graduate courses outside the department must be at or above the 500 level.
- Continuous enrollment required.
- Two of the following courses must be taken: BAE 815 , BAE 816 , BAE 817 , and/or BAE 818 .

Course Requirements

Biological and Agricultural Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BAE 640 - Instrumentation and Control for Biological Systems **Credits: 3**
- BAE 645 - Bioenvironmental Reaction Engineering **Credits: 3**
- BAE 651 - Air Pollution Engineering **Credits: 3**
- BAE 660 - Hydraulic Transport in Biological Systems **Credits: 3**
- BAE 663 - Environmental and Ecological Risk Assessment **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Biological Systems Engineering - Machine Systems (BS)/Biological and Agricultural Engineering (MS)

The accelerated Accelerated Biological Systems Engineering - Machine Systems (BS)/Biological and Agricultural Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Biological and Agricultural Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.

- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

An entering student must be pursuing a B.S. BSE and have at least a cumulative 3.25 GPA. The student must enroll in this program after completing 80 undergraduate credit hours, but before his/her B.S. degree is awarded.

- At least 18 hours of graduate courses must be at or above the 700 level.
- Graduate courses in the BAE department must be at or above the 600 level.
- Graduate courses outside the department must be at or above the 500 level.
- Continuous enrollment required.
- Two of the following courses must be taken: BAE 815 , BAE 816 , BAE 817 , and/or BAE 818 .

Course Requirements

Biological and Agricultural Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- BAE 636 - Biological Systems Engineering Senior Design II **Credits: 1-3**
- BAE 640 - Instrumentation and Control for Biological Systems **Credits: 3**
- BAE 750 - Analysis and Design of Off-Highway Vehicles **Credits: 3**
- ME 610 - Finite Element Applications in Mechanical Engineering **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Biological and Agricultural Engineering (PHD)

The Carl and Melinda Helwig Department of Biological and Agricultural Engineering offers courses of study leading to the Doctor of Philosophy (Ph.D.) in Biological and Agricultural Engineering. Ph.D. students may specialize in (1) environmental engineering, (2) bioprocessing engineering, (3) machinery systems, or (4) natural resource engineering.

Admission Requirements

Admission to the Ph.D. program in Biological and Agricultural Engineering requires a degree of Master of Science in agricultural engineering, biological systems engineering or related engineering disciplines and meeting all requirements for admission to the Graduate School. Strongly qualified students with a Bachelor of Science in agricultural engineering, biological systems engineering or related engineering disciplines may be admitted directly to the Ph.D. program without a Master of Science degree. Graduates from other engineering curricula or a strong physical/biological science curriculum may be admitted provisionally with undergraduate course deficiencies specified.

An application for admission should be made six months prior to the start of the term in which enrollment is desired. Additional information on graduate programs and on application for admission to the Graduate School of Kansas State University may be obtained by writing the department.

A TOEFL score of 550 or higher is required of those students whose native language is not English. The TOEFL score must reflect results of a TOEFL test that was taken within two years prior to the application. Students meeting all requirements for admission except for the TOEFL score may be admitted to the Graduate School on a provisional status. They may enroll upon scoring 550 or higher on a subsequent TOEFL or after successfully completing the English Language Program at Kansas State University.

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Course Requirements

The requirements for a Ph.D. degree are 90 credit hours beyond the bachelor degree, including a Ph.D. dissertation of at least 30 semester hours based upon major, original research. Award of a doctorate requires successful completion of the equivalent of at least three full years of full-time study beyond the baccalaureate.

Required Courses: 4 credit hours

- BAE 815 - Graduate Seminar 1: Literature Review **Credits: 1**
- BAE 816 - Graduate Seminar 2: Academic Writing and Publishing **Credits: 1**
- BAE 817 - Graduate Seminar 3: Data Interpretation and Presentation **Credits: 1**
- BAE 818 - Graduate Seminar 4: Research Presentation and Teaching **Credits: 1**

Concentration Courses: 20-26 credit hours

These courses are suggested, but other courses may be used. Other courses may be substituted as approved by the student's supervisory committee and consistent with Graduate School requirements for graduate credit.

- BAE 626 - Bioseparations **Credits: 3**
- BAE 640 - Instrumentation and Control for Biological Systems **Credits: 3**
- BAE 642 - Fundamentals of Conversion of Biorenewable Resources **Credits: 3**
- BAE 643 - Life Cycle Assessment **Credits: 3**
- BAE 645 - Bioenvironmental Reaction Engineering **Credits: 3**
- BAE 650 - Energy and Biofuel Engineering **Credits: 3**
- BAE 651 - Air Pollution Engineering **Credits: 3**
- BAE 660 - Hydraulic Transport in Biological Systems **Credits: 3**
- BAE 663 - Environmental and Ecological Risk Assessment **Credits: 3**
- BAE 664 - Green Stormwater Infrastructure Design and Assessment **Credits: 3**

- BAE 665 - Ecological Engineering Design Credits: 3
- BAE 669 - Watershed Modeling Credits: 3
- BAE 740 - Biomaterials Processing Credits: 3
- BAE 750 - Analysis and Design of Off-Highway Vehicles Credits: 3
- BAE 768 - Geoenvironmental Engineering Design Credits: 3
- BAE 840 - Measurement Systems Credits: 3
- BAE 842 - Advanced Biomass Thermochemical Conversion Credits: 3
- BAE 865 - Advanced Ecological Engineering Design Credits: 3
- BAE 869 - Advanced Watershed Modeling Credits: 3

Research: 30-36 credit hours

- BAE 999 - Dissertation Research Credits: 1-18

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Graduate Certificate

Sustainable Food, Energy, Water Graduate Certificate

This graduate certificate program will train students with the technical skills and broad understanding to address sustainability and key resource challenges (e.g., food, water, energy, population) faced by many sectors of society, with an emphasis on rural areas. The graduate certificate will prepare students to address critical issues in FEW systems such as cross-cutting engineering innovations, socioeconomic factors driving resource recovery, reuse, and rural development; soil, water, and energy conservation; water and wastewater management.

Point of contact:

Stacy L. Hutchinson, Ph.D.

Email: sllhutch@ksu.edu | Phone: 785-532-5844

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Admission to the FEW Graduate Certificate program will require that the student (a) has completed a 4-year undergraduate degree or has been accepted by the Graduate School for admission to a graduate degree program at Kansas State University, and (b) has completed at least 3 upper-division (junior-level or higher) undergraduate courses in technical areas consistent with topics included in FEW subject matter electives. The FEW Program Director will determine if the required qualifications have been met by each applicant.

Special Requirements

General Requirements: Students must be enrolled in a graduate degree program at Kansas State University, and complete a minimum of 12 hours of prescribed coursework.

Complete 2 semesters of DEN 892 FEW Seminar (0 credit hours).

If a student is enrolled in a graduate degree program, no more than six credits may be taken from the student's home department. In addition, the decision about which FEW courses may count toward graduate program degree requirements is left to the student and his/her supervisory committee in accordance with home departmental policy.

Course Requirements

Required Courses

- GENAG 670 - Introduction to Agricultural Resources and Environmental Management **Credits: 2**
- GENAG 870 - Capstone for Agricultural Resources and Environmental Management **Credits: 1**

Natural/Technology Systems Elective Courses

Minimum of 3 credits required.

- AGRON 615 - Topics in Agronomy **Credits: 1-3**
- AGRON 635 - Soil and Water Conservation **Credits: 3**
- AGRON 835 - Nutrient Sources, Uptake and Cycling **Credits: 3**
- ATM 661 - Watershed Assessment and Management **Credits: 3**
- BAE 560 - Hydrology for Biological Systems **Credits: 3**
- BAE 665 - Ecological Engineering Design **Credits: 3**
- BAE 669 - Watershed Modeling **Credits: 3**
- BAE 865 - Advanced Ecological Engineering Design **Credits: 3**
- BAE 869 - Advanced Watershed Modeling **Credits: 3**
- CE 550 - Water Resources Engineering **Credits: 3**
- CE 565 - Water and Wastewater Engineering **Credits: 3**
- CE 625 - Principles of Geoenvironmental Engineering **Credits: 3**
- CE 751 - Hydraulics of Open Channels **Credits: 3**
- CE 752 - Advanced Hydrology **Credits: 3**
- CE 766 - Wastewater Engineering: Biological Processes **Credits: 3**
- CE 816 - Selected Topics in Civil Engineering **Credits: 1-18**
- CE 854 - Analysis of Groundwater Flow **Credits: 3**
- CE 866 - Advanced Wastewater Treatment **Credits: 3**
- CHE 862 - Advanced Transport Phenomena I **Credits: 3**
- GEOG 535 - Global Climatology and Climate Change **Credits: 4**
- GEOG 840 - Advanced Environmental Geography **Credits: 3**
- ME 523 - Thermodynamics II **Credits: 3**
- ME 721 - Thermal Systems Design **Credits: 3**
- ME 820 - Intermediate Topics in Thermal and Fluid Mechanics **Credits: 0-18**

Social/Human System Elective Courses

Minimum of 3 credits required.

- AGCOM 610 - Crisis Communication Credits: 3
- AGCOM 810 - Scientific Communication Credits: 3
- AGED 786 - Topics in Agricultural Education Credits: 1-3
- AGRON 502 - International Experience in Agronomy Credits: 0-6
- AGECE 525 - Natural Resource And Economics Credits: 3
- AGECE 610 - Current Agriculture and Natural Resource Policy Issues Credits: 3
- AGECE 810 - Price, Income and Trade Policies in Agriculture Credits: 3
- AGECE 823 - Production Economics II Credits: 3
- AGECE 825 - Natural Resource Policy Credits: 3
- AGECE 925 - Advanced Resource and Environmental Economics Credits: 3
- GEOG 761 - Human Impact on the Environment Credits: 3
- GEOG 765 - Geography of Natural Hazards Credits: 3
- GEOG 770 - Perception of the Environment Credits: 3
- SOCIO 532 - Our Communities, Our Futures Credits: 3
- SOCIO 533 - Society, Food, and Agriculture Credits: 3
- SOCIO 536 - Society and Natural Resources Credits: 3
- SOCIO 831 - Sociology of Agriculture Credits: 3
- SOCIO 832 - Sociology of Community Credits: 3
- SOCIO 835 - Environment and Society Credits: 3
- SOCIO 842 - Technology and Society Credits: 3
- SOCIO 934 - Sociology of Rural Development Credits: 3

Total Hours Required for Graduate Certificate: 12

Master of Science

Biological and Agricultural Engineering (MS)

Admission to a Master of Science program in Biological and Agricultural Engineering requires a degree of Bachelor of Science in agricultural engineering, biological systems engineering, or related engineering disciplines and meeting all requirements for admission to the Graduate School. Graduates from other engineering curricula or a strong physical/biological science curriculum may be admitted provisionally with undergraduate course deficiencies specified.

Admission Requirements

An application for admission should be made six months prior to the start of the term in which enrollment is desired. Additional information on graduate programs and on application for admission to the Graduate School of Kansas State University may be obtained by writing the department.

A TOEFL score of 550 or higher is required of those students whose native language is not English. The TOEFL score must reflect results of a TOEFL test that was taken within two years prior to the application. Students meeting all requirements for admission except for the TOEFL score may be admitted to the Graduate School on a provisional status. They may enroll upon

scoring 550 or higher on a subsequent TOEFL or after successfully completing the English Language Program at Kansas State University.

Course Requirements

The minimum requirements for an M.S. degree are 30 semester hours of graduate credit with at least 18 of these semester hours being at the 700 level or above. No 500 level courses with the BAE or ATM prefix may be used towards the degree.

Required Courses

Take two of the following courses

- BAE 815 - Graduate Seminar 1: Literature Review **Credits: 1**
- BAE 816 - Graduate Seminar 2: Academic Writing and Publishing **Credits: 1**
- BAE 817 - Graduate Seminar 3: Data Interpretation and Presentation **Credits: 1**
- BAE 818 - Graduate Seminar 4: Research Presentation and Teaching **Credits: 1**

Electives Courses

Other courses may be substituted as approved by the student's supervisory committee and consistent with Graduate School requirements for graduate credit.

- BAE 626 - Bioseparations **Credits: 3**
- BAE 640 - Instrumentation and Control for Biological Systems **Credits: 3**
- BAE 642 - Fundamentals of Conversion of Biorenewable Resources **Credits: 3**
- BAE 643 - Life Cycle Assessment **Credits: 3**
- BAE 645 - Bioenvironmental Reaction Engineering **Credits: 3**
- BAE 650 - Energy and Biofuel Engineering **Credits: 3**
- BAE 651 - Air Pollution Engineering **Credits: 3**
- BAE 660 - Hydraulic Transport in Biological Systems **Credits: 3**
- BAE 663 - Environmental and Ecological Risk Assessment **Credits: 3**
- BAE 664 - Green Stormwater Infrastructure Design and Assessment **Credits: 3**
- BAE 665 - Ecological Engineering Design **Credits: 3**
- BAE 669 - Watershed Modeling **Credits: 3**
- BAE 740 - Biomaterials Processing **Credits: 3**
- BAE 750 - Analysis and Design of Off-Highway Vehicles **Credits: 3**
- BAE 768 - Geoenvironmental Engineering Design **Credits: 3**
- BAE 840 - Measurement Systems **Credits: 3**
- BAE 842 - Advanced Biomass Thermochemical Conversion **Credits: 3**
- BAE 865 - Advanced Ecological Engineering Design **Credits: 3**
- BAE 869 - Advanced Watershed Modeling **Credits: 3**

Thesis Option Courses

6-8 credit hours

- BAE 899 - Master's Thesis Credits: 1-18

Report Option Courses

2 credit hours

- BAE 899 - Master's Thesis Credits: 1-18

Total Hours Required for Master's: 30

Chemical Engineering

Tim Taylor Department of Chemical Engineering

Jennifer L. Anthony, Head

Placidus B. Amama, Director of graduate studies

1701A Platt St
1005 Durland Hall
785-532-5584
che@k-state.edu
www.che.ksu.edu

Program description

The department offers M.S. and Ph.D. programs in chemical engineering and in interdisciplinary areas of bio-based materials science and engineering, food science, environmental engineering, and materials science.

Areas of study and research emphasize sustainable energy, nanotechnology, reaction engineering, materials science and transport phenomena. Specific areas include biomaterials science, biomass conversion, biochemical engineering, biological interfaces, biosensing, bionanotechnology, protein engineering, catalytic conversion of light hydrocarbons, chemical vapor deposition of electronic materials, environmental pollution control, heterogeneous catalysis, polymer science, semiconductor crystal growth, short-contact time reactors, surface science, molecular modeling, and high performance computing.

For more information about the Ph.D. program, see the Engineering section of this catalog

Research facilities

The Department of Chemical Engineering has modern, well-equipped research laboratories for studying transport phenomena, materials science and engineering, chemical reaction engineering and biochemical engineering. Specialized instrumental capabilities include, Fourier-transform infrared spectrometry, catalyst preparation equipment, tubular gas reactors, gas and liquid chromatography, mass spectrometry, polymer characterization equipment such as dynamic mechanical analysis, gas adsorption analysis, chemical vapor deposition reactors, ultra-high temperature furnaces, epifluorescent microscopy, patterned illumination system, x-ray diffractometer, high performance computing cluster, energy storage, heterogeneous catalysis, automated fluorescence microscopes for live-cell microscopy, microfluidic device fabrication facilities, cell culturing facilities, confocal laser scanning fluorescence microscope, dynamic/static light scattering, size exclusion chromatography, microplate reader, free radical analyzer DNA/protein electrophoresis, and more.

Admission procedures

Highly motivated students interested in earning an advanced graduate degree and the research activities of the department are encouraged to apply. All applicants must submit a completed application form, official copies of their undergraduate transcripts, 3 letters of recommendations, official GRE scores and TOEFL scores if they did not earn their BS degree from an ABET-accredited institution.

Financial support

Graduate research assistantships and fellowships are available to qualified students. The base stipend begins at \$31,000 plus tuition and fees. Supplemental grants and fellowships are also available to outstanding candidates. Sponsored research work can be used toward thesis credit.

Doctor of Philosophy

Chemical Engineering (PHD)

For more information about the Ph.D. program, see the Chemical Engineering section of this catalog.

Admission Requirements

The Ph.D. degree requires 90 credit hours. This is divided among major course work, minor subjects, and research work. Students enrolled in 12 hours per semester during the regular semesters and 3 hours during the summer term would achieve this total in just over 3 years. A diversified and flexible choice of minor subjects and a good selection of research topics are available. Qualified students may bypass the master's degree and work directly toward the Ph.D. degree. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Requirements specific to the Department of Chemical Engineering (please see below) are as follows:

- Satisfactory completion of specified coursework.
- Satisfactory performance in a qualifying examination covering the field of Chemical Engineering.
- Submission of a written thesis proposal and satisfactory oral defense of this proposal.
- Submission of an acceptable dissertation, and satisfactory oral defense of this dissertation.
- Presentation of research results at a departmental seminar.

Course Requirements

Required Courses

Ph.D. students are expected to be well grounded in the fundamentals of Chemical Engineering and must successfully complete the following courses (or their equivalents).

- CHE 815 - Advanced Chemical Engineering Thermodynamics **Credits: 3**
- CHE 822 - Advanced Chemical Reaction Engineering **Credits: 3**
- CHE 835 - Chemical Engineering Analysis **Credits: 3**
- CHE 862 - Advanced Transport Phenomena I **Credits: 3**
- CHE 875 - Graduate Seminar in Chemical Engineering **Credits: 1**

Elective Requirements (18 hours)

Elective Graduate Courses - all students are required to demonstrate a mastery of some body of knowledge in their research field by completing elective courses. At least fifteen hours of work is required in addition to those listed above.

No more than 6 hours of course work at the 500-level are permitted.

Thesis Hours

A Ph.D. must include at least 30 hours of research credits. All students on stipends must be enrolled 9 hours per semester. Students receive research credit for those hours not taken as coursework. Thus, reaching this minimum is not difficult.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Air Quality Graduate Certificate

Contact: M.H. Hosni
E-mail: hosni@ksu.edu

Contact: Ronaldo Maghirang
E-mail: rmaghir@ksu.edu

This certificate is offered through the Chemical Engineering graduate program.

Educational objectives

The educational objectives of the air quality certificate program are as follows:

1. To prepare graduates for careers related to air quality
2. To encourage interdisciplinary educational experiences in air quality
3. To enhance the educational experiences of participating graduate students

Administration

The air quality program administrative office is the Institute for Environmental Research in Seaton Hall. This office will administer the air quality certificate program.

Students working toward advanced degrees should submit a proposed list of courses to be used to meet certification requirements to the director of the air quality program. Where these courses are included in a program of study for an advanced degree, they should be approved by the student's supervisory committee and the coordinator of the air quality certificate program. A copy of the approved program should be distributed to the student, major professor, and the graduate school. A file is maintained for each student who is in the certificate program by the administrative office in the Institute for Environmental Research. Where some

courses for the certificate program are not included in the advanced degree program of study, the course list should be approved by the major professor and the coordinator of the air quality certificate program. For example, the student may decide to complete the certificate program after the advanced degree program of study is already filed and nearly completed.

The air quality graduate education committee will review the air quality certificate program periodically, and they will have the authority to approve modifications to the approved list of courses.

Air Quality Faculty

Faculty who wish to participate in the air quality program are welcome to do this. Those not presently listed may submit a request to the director to be added to the list.

Coordination

The air quality certificate program is coordinated by Mo Hosni, Institute for Environmental Research, Seaton Hall, and Ronaldo Maghirang, Associate Dean of Engineering, Rathbone Hall. All correspondence should be sent to the administrative office in the Institute for Environmental Research. Mo Hosni is the coordinator who officially approves course lists for the certificate program.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Special requirements

The course requirements for the certificate program in air quality are as follows:

1. For the Ph.D. degree, 15 credit hours are required including two credits of Air Quality Seminar, at least one course which includes safety and health/toxicology, at least one course which includes air quality measurement and characterization, and at least one course which includes air quality management and control. To fulfill the interdisciplinary objectives of the program, the course list should include courses from at least three academic departments.
2. For the M.S. degree, 12 credit hours are required including one credit of Air Quality Seminar and courses from at least two of the three areas required for the Ph.D. The course list should include courses from at least three different departments.

It is expected that special topics courses in air quality will be approved for the certificate program by the air quality graduate education committee upon request following the procedure described below.

Course Requirements

Courses in Safety and Health/Toxicology

- DMP 650 - Fundamentals of Public Health and Food Safety **Credits: 3**
- AP 871 - Toxicology **Credits: 3**
- AP 830 - Toxins in the Biological System **Credits: 2**
- AP 831 - Current Topics in Toxicology **Credits: 2**
- FDSCI 915 - Food Toxicology **Credits: 2**
- IMSE 610 - Occupational Safety Engineering **Credits: 3**
- ASMS 511 - Occupational and Agricultural Health **Credits: 3**

Courses in Measurement and Characterization

- ASI 864 - Analytical Techniques-Immunoassays Credits: 1
- BAE 811 - Advances in Particle Technology Credits: 3
- CHM 566 - Instrumental Methods of Analysis Credits: 3
- FDSCI 713 - Rapid Methods and Automation in Microbiology Credits: 2
- GEOG 608 - Geographic Information Systems II Credits: 3
- GEOG 711 - Topics in Remote Sensing Credits: 3

Courses in Management and Control

- BAE 651 - Air Pollution Engineering Credits: 3
- FDSCI 791 - Advanced Application of HACCP Principles Credits: 3
- ME 622 - Indoor Environmental Engineering Credits: 3
- ME 721 - Thermal Systems Design Credits: 3
- ME 722 - Human Thermal Engineering Credits: 3

Supporting Courses

- AGRON 746 - Environmental Soil Physics Credits: 3
- AGRON 900 - Micrometeorology Credits: 3
- BIOL 604 - Biology of the Fungi Credits: 3
- BIOL 687 - Microbial Ecology Credits: 3
- BIOL 805 - Advanced Mycology Credits: 3
- CE 967 - Physicochemical Processes Credits: 3
- CHE 682 - Surface Phenomena Credits: 3
- CHE 750 - Air Quality Seminar Credits: 1
- CHE 862 - Advanced Transport Phenomena I Credits: 3
- CHE 910 - Selected Topics in Transport Phenomena Credits: 3
- CHM 856 - Chemical Kinetics Credits: 3
- CHM 937 - Applications of Surface Science to Chemistry Credits: 3
- ENTOM 620 - Pesticides, People, and the Environment Credits: 2
- FDSCI 695 - Quality Assurance of Food Products Credits: 3
- GEOG 735 - Topics in Climatology Credits: 3
- GEOG 761 - Human Impact on the Environment Credits: 3
- GEOG 890 - Advanced Spatial Analysis Techniques Credits: 3
- GEOL 712 - Advanced Geochemistry Credits: 3
- ME 720 - Intermediate Fluid Mechanics Credits: 3
- ME 831 - Boundary Layer Theory Credits: 3
- PHYS 651 - Introduction to Optics Credits: 4
- PHYS 652 - Applied Optics and Optical Measurement Credits: 3

Total Hours Required for Graduate Certificate: 12-15

Master of Science

Chemical Engineering (MS)

A M.S. degree in Chemical Engineering requires 30 credit hours, and can be earned with either the thesis or report options. In the thesis option, 24 hours of course work and 6 hours of thesis are required. The thesis is based on directed research performed by the student. In the report option, 28 hours of course work and 2 hours of report are required. The report is based on a literature review or design project performed by the student.

Course Requirements

Required Courses

M.S. students are expected to be well grounded in the fundamentals of Chemical Engineering and must successfully complete the following courses (or their equivalents).

- CHE 835 - Chemical Engineering Analysis **Credits: 3**
- CHE 815 - Advanced Chemical Engineering Thermodynamics **Credits: 3**
- CHE 822 - Advanced Chemical Reaction Engineering **Credits: 3**
- CHE 862 - Advanced Transport Phenomena I **Credits: 3**
- CHE 875 - Graduate Seminar in Chemical Engineering **Credits: 1**

Elective Courses

Total Hours Required for Master's: 30

Civil Engineering

Christopher A. Jones, Interim Head
Rasheed Hayder, Director of graduate studies

2118 Fiedler Hall
785-532-5862
Fax: 785-532-7717
gradce@ksu.edu
<http://www.ce.ksu.edu>

Program description

The Department of Civil Engineering at Kansas State University offers comprehensive programs leading to the degrees of master of science and doctor of philosophy in civil engineering. Specializations include environmental engineering, geotechnical engineering, structural engineering, transportation engineering, and water resources engineering. An active research program is conducted in each of these areas, and it is the goal of the department to maintain a close association between graduate study, research, teaching, and engineering practice.

Research facilities

The Department of Civil Engineering has several laboratories which can be used to perform a wide variety of graduate research projects. These include laboratories in the areas of environmental engineering, hydraulic engineering, materials testing, geotechnical engineering, structural engineering, and water resources engineering.

The department also has the Civil Infrastructure Systems Laboratory (CISL) which includes a full-scale Accelerated Pavement Testing facility.

In addition, the department has modern computing facilities including a number of personal computers and workstations.

Financial support

The department offers several graduate research, teaching, and graduate assistantships. These positions are generally 0.5 time appointments and the stipends vary accordingly. In addition, a number of graduate research assistantships are supported through externally funded research projects obtained by individual faculty members. Student fees are assessed at the in-state level for graduate students who receive research, teaching, and graduate assistantships.

"Students holding GTA, GRA, or GA appointments from September 1 through November 17 receive tuition benefits for the fall term, and students holding GTA, GRA, or GA appointments from February 1 through April 17 receive tuition benefits for the spring term. If a graduate appointment does not begin by these dates or terminates before these ending dates, all tuition benefits will be lost. The student then is responsible for the total tuition payment." Graduate Handbook, The Graduate School

Career opportunities

Graduate study in civil engineering will provide students with training for a wide variety of academic, technological, and public service careers. Students completing the master of science degree program typically find employment related to their chosen discipline in either private consulting firms or governmental agencies. Students completing the doctor of philosophy degree program can also expect to find employment in academic positions, or in government and private research laboratories.

Areas of emphasis

Environmental and water resources engineering: Im, Parameswaran

Structural analysis and design: Ghimire, Peterman, Rasheed

Geotechnical engineering: Peric, Hossain

Transportation and materials engineering: Aziz, Fitzsimmons, Hossain, Jones

Accelerated

Accelerated Civil Engineering - Construction (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - Construction (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.

- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 680 - Economics of Design and Construction **Credits: 3**
- CE 741 - Civil Engineering Materials II **Credits: 3**
- CE 743 - Advanced Reinforced Concrete Design **Credits: 3**
- CE 774 - Pavement Design **Credits: 3**
- CE 777 - Portland Cement Concrete Pavements **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Civil Engineering - Environmental (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - Environmental (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 625 - Principles of Geoenvironmental Engineering **Credits: 3**
- CE 654 - Design of Groundwater Flow Systems **Credits: 3**
- CE 751 - Hydraulics of Open Channels **Credits: 3**
- CE 762 - Water Treatment Processes **Credits: 3**
- CE 766 - Wastewater Engineering: Biological Processes **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Civil Engineering - General (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - General (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 625 - Principles of Geoenvironmental Engineering **Credits: 3**
- CE 654 - Design of Groundwater Flow Systems **Credits: 3**
- CE 680 - Economics of Design and Construction **Credits: 3**
- CE 741 - Civil Engineering Materials II **Credits: 3**
- CE 743 - Advanced Reinforced Concrete Design **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Civil Engineering - Geotechnical (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - Geotechnical (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 654 - Design of Groundwater Flow Systems **Credits: 3**
- CE 680 - Economics of Design and Construction **Credits: 3**
- CE 728 - Advanced Geotechnical Design **Credits: 3**
- CE 741 - Civil Engineering Materials II **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Civil Engineering - Structural (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - Structural (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has

deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 690 - Selected Topics in Civil Engineering **Credits: 0-18**
- CE 732 - Advanced Structural Analysis I **Credits: 3**
- CE 742 - Advanced Steel Design **Credits: 3**
- CE 743 - Advanced Reinforced Concrete Design **Credits: 3**
- CE 745 - Structural Dynamics **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Civil Engineering - Transportation/Material (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - Transportation/Material (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.

- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 680 - Economics of Design and Construction **Credits: 3**
- CE 771 - Travel Demand Modeling **Credits: 3**
- CE 774 - Pavement Design **Credits: 3**
- CE 775 - Traffic Engineering **Credits: 3**
- CE 786 - Land Development for Civil Engineers and Planners **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Civil Engineering - Water Resources (BS)/Civil Engineering (MS)

The accelerated Accelerated Civil Engineering - Water Resources (BS)/Civil Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Civil Engineering degree with early admission

to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The Graduate School requires that all graduate courses be taken for graduate credit during the semester of enrollment. The Graduate School will not change an undergraduate course to a graduate course after grades are assigned. If the student has deferred admission, then the student must submit a special enrollment request to enroll or change current course(s) to the graduate level credit.

- Students must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- Students must complete all B.S.C.E. degree requirements with the exception that up to 6 credit hours of approved 600 or 700-level classes taken for graduate credit can also count toward their B.S. degree requirements. For those students in the research with thesis option, an additional 3 credit hours of independent study can also count toward their B.S. degree requirements.

Course Requirements

Civil Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CE 625 - Principles of Geoenvironmental Engineering **Credits: 3**
- CE 654 - Design of Groundwater Flow Systems **Credits: 3**
- CE 725 - Seepage in Permeable Materials **Credits: 3**
- CE 751 - Hydraulics of Open Channels **Credits: 3**
- CE 752 - Advanced Hydrology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Civil Engineering (PHD)

The doctorate program in civil engineering is a research-oriented curriculum designed to prepare students for advanced research and university-level academic positions in civil engineering, as well as industry.

Admission Requirements

The general requirements for admission to a civil engineering graduate program include a Bachelor of Science or equivalent degree from an accredited civil engineering program and evidence the applicant has the ability to do satisfactory graduate work. Students not possessing a degree in civil engineering may be admitted if their undergraduate work is closely related to their civil engineering specialty area of interest, and they complete a core program of undergraduate civil engineering coursework.

Students admitted for work toward a doctorate degree are required to develop an original research program, pass a preliminary examination and complete a doctoral dissertation under the guidance of and advisory committee.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

This program requires a minimum of 90 credit hours or 60 credit hours beyond the master's degree, including at least 30 hours of research credit.

Fifteen hours of coursework should be at the 800-level or above. Appropriate coursework from the master's degree can be transferred to the Ph.D. program of study with the approval of the supervisory committee.

A written preliminary exam must be taken by doctoral students. The preliminary exam must be completed within three years and at least seven months before the final oral exam. A dissertation of original research of sufficient quality and importance to merit publication in refereed journals should be completed by all doctoral students. The final examination may be taken when the student has completed all requirements of the Program of Study as well as satisfied all other program requirements.

Required Courses

Concentration Courses

Research/Dissertation

Program Total Credits: 60

Master's degree Transfer Credits: 30

*Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree

Total Hours Required for Doctorate: 90

Graduate Certificate

Geoenvironmental Graduate Certificate

Contact: Mustaque Hossain

E-mail: mustak@ksu.edu

The purpose of the geoenvironmental certificate program is to:

- Prepare graduates for careers related to geoenvironmental engineering;
- Promote interdisciplinary educational experiences in geoenvironmental engineering and;
- Enhance interactions among faculty and students in the allied science and engineering disciplines related to geoenvironmental engineering.

Consistent with the other certificate programs established by the Graduate School, this certificate program requires 12 credit hours of coursework. It includes nine credit hours from three required courses and three credit hours of elective chosen from a list of approved courses. The geoenvironmental certificate program is administered and coordinated in the Department of Civil Engineering.

Course Requirements

Required Courses

- CE 625 - Principles of Geoenvironmental Engineering Credits: 3
- CE 654 - Design of Groundwater Flow Systems Credits: 3
- CE 768 - Geoenvironmental Engineering Design Credits: 3

Elective Courses

Choose one course from:

- AGRON 605 - Soil and Environmental Chemistry Credits: 3
- AGRON 746 - Environmental Soil Physics Credits: 3
- AGRON 816 - Soil Physics Credits: 3
- AGRON 905 - Advanced Soil Chemistry Credits: 3
- AGRON 916 - Advanced Soil Physics Credits: 3
- CE 723 - Designing with Geosynthetics Credits: 3
- CE 725 - Seepage in Permeable Materials Credits: 3
- CE 762 - Water Treatment Processes Credits: 3
- CE 766 - Wastewater Engineering: Biological Processes Credits: 3
- CE 807 - Applied Geostatistics Credits: 2
- CE 823 - Engineering Properties of Cohesive Soils Credits: 3

- CE 825 - Environmental Geotechnology Credits: 3
- CE 828 - Advanced Seepage and Settlement Analysis in Soils Credits: 3
- CE 854 - Analysis of Groundwater Flow Credits: 3
- CE 861 - Environmental Engineering Chemistry Credits: 3
- CE 930 - Advanced Topics in Geotechnical Engineering Credits: 1-18
- CE 970 - Advanced Topics in Environmental and Water Resources Engineering Credits: 1-18
- CHE 650 - Hazardous Waste Engineering Seminar Credits: 1
- CHE 682 - Surface Phenomena Credits: 3
- CHE 715 - Biochemical Engineering Credits: 3
- CHE 805 - Selected Topics in Biochemical Engineering Credits: 3
- CHE 862 - Advanced Transport Phenomena I Credits: 3
- GEOL 611 - Hydrogeology Credits: 3
- GEOL 712 - Advanced Geochemistry Credits: 3

Total Hours Required for Graduate Certificate: 10-12

Transportation Engineering Graduate Certificate

Contact: Eric Fitzsimmons

Email: fitzsimmons@ksu.edu

Home Page: <http://global.k-state.edu/engineering/transportation/>

The provision of a safe, efficient and environmentally sound transportation system is critical to the physical, environmental and economic health of the nation. A pool of highly qualified transportation professionals is required to plan, design, operate and maintain our nation's transportation infrastructure, facilities, and services. There is a need for educational programs designed for transportation professionals who want to expand their knowledge and skills through a program of graduate study that is less extensive, and different from, a traditional master's program. Offered through the Civil Engineering graduate program, the transportation engineering certificate program will provide transportation professionals with the opportunity to pursue a focused collection of courses that, when completed, allows the student to receive recognition of their continued effort in the area of transportation engineering, or to cumulate credit hours toward their master's degree.

Special Requirements

In addition to the course work requirements described below, students are further required to demonstrate advanced knowledge and competency in the area of transportation engineering by completing one of the following:

1. A research paper prepared as part of the requirements of one of the Core or Elective Courses described above. To satisfy this requirement, the research paper must have received a minimum letter grade of "B."
2. Presentation of the results of a transportation engineering related study or project to the faculty of the Transportation Engineering Certificate Program. To satisfy this requirement, the study or project must have been completed under the supervision of the candidate for the Graduate Certificate in Transportation Engineering.

The required evidence of advanced knowledge and competency should be presented to the Program Coordinator prior to the beginning of the candidate's final semester of course work.

Course Requirements

The Graduate Certificate in Transportation Engineering requires the completion of 12 credit hours of course work as described below.

Required Courses

All students must complete two of the following Core Courses (6 credit hours):

- CE 774 - Pavement Design **Credits: 3**
- CE 775 - Traffic Engineering **Credits: 3**
- CE 786 - Land Development for Civil Engineers and Planners **Credits: 3**

Elective Courses

In addition to the Core Courses, students must complete a minimum of 6 additional credit hours of electives from the remaining core course and the following approved list of courses.

- CE 680 - Economics of Design and Construction **Credits: 3**
- CE 741 - Civil Engineering Materials II **Credits: 3**
- CE 771 - Travel Demand Modeling **Credits: 3**
- CE 777 - Portland Cement Concrete Pavements **Credits: 3**
- CE 816 - Selected Topics in Civil Engineering **Credits: 1-18**
- CE 872 - Transportation Safety **Credits: 3**
- CE 874 - Sustainable Transportation Asset Management **Credits: 3**
- CE 875 - Traffic Flow Theory **Credits: 3**
- Other Graduate level course work (maximum of 3 credit hours) in Engineering Management or Statistics as approved by the Program Director.

Total Hours Required for Graduate Certificate: 12

Master of Science

Civil Engineering (MS)

The master's program is a broad-based curriculum designed to prepare students for advanced positions in the civil engineering industry, consulting and public agencies, as well as for advancing graduate studies. Students can choose a coursework-only option (30 course credits and a final exam), thesis (24 course credits + 6 thesis credits) or project option (28 course credits + 2 project credits) or pursue their degree online through the K-State global campus.

Contact information for graduate program coordinator: Dr. Prathap Parameswaran, prathapp@ksu.edu.

Admission Requirements

A bachelor's degree in civil engineering or other equivalent engineering/technology degree is the minimum requirement. Non-engineering bachelor's degree may be accepted for admission into the CE Master's program, provided appropriate deficiency course requirements will be completed prior to completion of the PhD degree.

An undergraduate GPA above 3.0 (or an equivalent scale for accredited international programs) is required. Completion of the Graduate Records Examination (GRE) is a requirement, with a preferred score of 80th percentile in the Quantitative section and can be waived for domestic applicants from K-State or those with an undergraduate degree from an ABET accredited institution. For international applicants, the minimum English language proficiency test requirements from the K-State graduate school should be met, more information can be found here: <https://www.k-state.edu/grad/admissions/application-process/>.

Graduation Requirements

Thesis Requirements:

A master's thesis presents the results of an original investigation of a problem or topic approved by the candidate's supervisory committee. Its purpose is to demonstrate the candidate's ability to conduct original research of a type appropriate to the academic discipline, to analyze the information obtained from the research, and to present the results in a form acceptable to the supervisory committee.

Report Requirements:

A master's report is generally shorter than a thesis, and it may present the results of a more limited original investigation. Alternatively, it may review the state of a particular scholarly or scientific problem, or especially in the case of professional programs or applied disciplines it may describe a project appropriate to the discipline.

Students who pursue a report or thesis option should follow the guidelines from the K-State graduate school and comply with the deadlines for the respective semester when the student intends to graduate.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

- Of the 30 credit hours required for the master's POS, at least 18 hours should be at the 700 level and above, including the thesis/research and the report/problems hours required by the thesis and report options.
- No 500-level course taken in the student's major field of study, e.g., department, may appear in the program of study.
- Normally no more than 6 credit hours may be at the 500 level from relevant courses offered by any other college or department. No more than 3 hours in problems or other individualized courses may be applied to the master's degree.

The following is a list of recommended courses for each of the four specialization areas within the graduate Civil Engineering program.

Specialization area: Environmental Engineering

Required Courses

At least 9 credit hours required from this list.

- CE 762 - Water Treatment Processes **Credits: 3**
- CE 766 - Wastewater Engineering: Biological Processes **Credits: 3**
- CE 861 - Environmental Engineering Chemistry **Credits: 3**
- CE 868 - Chemicals in the Environment: Fate and Transport **Credits: 3**

Additional Courses

At least 6 credit hours required from this list.

- CE 654 - Design of Groundwater Flow Systems **Credits: 3**
- CE 751 - Hydraulics of Open Channels **Credits: 3**

- CE 816 - Selected Topics in Civil Engineering **Credits: 1-18**
- CE 854 - Analysis of Groundwater Flow **Credits: 3**
- CE 866 - Advanced Wastewater Treatment **Credits: 3**

Elective Courses

Student may choose from a list of approved electives offered by the Civil Engineering graduate program or other departments, in consultation with the student's supervisory committee.

Research

- Report option only: CE 898 - Master's Report **Credits: 1-18** (2 hours required)
- Thesis option only: CE 899 - Master's Thesis **Credits: 1-18** (6 hours required)

Specialization area: Geotechnical Engineering

Required Courses

At least 9 credit hours required from this list.

- CE 728 - Advanced Geotechnical Design **Credits: 3**
- CE 822 - Shear Strength and Slope Stability of Soils **Credits: 3**
- CE 824 - Strength and Deformation of Geo-materials **Credits: 3**
- CE 828 - Advanced Seepage and Settlement Analysis in Soils **Credits: 3**

Additional Courses

At least 9 credit hours required from this list.

- CE 774 - Pavement Design **Credits: 3**
- CE 803 - Numerical and Analytic Techniques for Engineers **Credits: 3**
- CE 816 - Selected Topics in Civil Engineering **Credits: 1-18**
- CE 827 - Computational Applications in Geo-Systems **Credits: 3**

Elective Courses

Student may choose from a list of approved electives offered by the Civil Engineering graduate program or other departments, in consultation with the student's supervisory committee.

Research

- Report option only: CE 898 - Master's Report **Credits: 1-18** (2 hours required)
- Thesis option only: CE 899 - Master's Thesis **Credits: 1-18** (6 hours required)

Specialization area: Structural Engineering

Required Courses

At least 9 credit hours required from this list.

- CE 732 - Advanced Structural Analysis I **Credits: 3**
- CE 742 - Advanced Steel Design **Credits: 3**
- CE 743 - Advanced Reinforced Concrete Design **Credits: 3**
- CE 802 - Advanced Mechanics of Materials and Applied Elasticity **Credits: 3**

Additional Courses

At least 12 credit hours required from this list.

- CE 741 - Civil Engineering Materials II **Credits: 3**
- CE 745 - Structural Dynamics **Credits: 3**
- CE 803 - Numerical and Analytic Techniques for Engineers **Credits: 3**
- CE 833 - Advanced Structural Analysis II **Credits: 3**
- CE 834 - Strengthening Design of Reinforced Concrete with Fiber Reinforced Polymers **Credits: 3**
- CE 837 - Structural Stability **Credits: 3**
- CE 844 - Prestressed Concrete Design **Credits: 3**
- MATH 551 - Applied Matrix Theory **Credits: 3**
- MATH 632 - Elementary Partial Differential Equations **Credits: 3**

Elective Courses

Student may choose from a list of approved electives offered by the Civil Engineering graduate program or other departments, in consultation with the student's supervisory committee.

Research

- Report option only: CE 898 - Master's Report **Credits: 1-18** (2 hours required)
- Thesis option only: CE 899 - Master's Thesis **Credits: 1-18** (6 hours required)

Specialization area: Transportation Engineering

Required Courses

All options.

- CE 774 - Pavement Design **Credits: 3**
- CE 775 - Traffic Engineering **Credits: 3**
- CE 786 - Land Development for Civil Engineers and Planners **Credits: 3**

Option Electives

Students should choose at least one course from each of the following areas, or 9-12 hours in one option area.

Planning Option

- CE 680 - Economics of Design and Construction Credits: 3
- CE 771 - Travel Demand Modeling Credits: 3
- CE 816 - Selected Topics in Civil Engineering Credits: 1-18
- CE 872 - Transportation Safety Credits: 3
- CE 874 - Sustainable Transportation Asset Management Credits: 3
- ECON 631 - Principles of Transportation Credits: 3
- GEOG 608 - Geographic Information Systems II Credits: 3
- IMSE 850 - Ergonomics (Human Factors) Engineering Credits: 3
- PLAN 667 - Transportation Planning Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 710 - Sample Survey Methods Credits: 3

Operations Option

- CE 680 - Economics of Design and Construction Credits: 3
- CE 771 - Travel Demand Modeling Credits: 3
- CE 816 - Selected Topics in Civil Engineering Credits: 1-18
- CE 872 - Transportation Safety Credits: 3
- CE 874 - Sustainable Transportation Asset Management Credits: 3
- CE 875 - Traffic Flow Theory Credits: 3
- ECON 631 - Principles of Transportation Credits: 3
- IMSE 560 - Introduction to Operations Research I Credits: 3
- IMSE 850 - Ergonomics (Human Factors) Engineering Credits: 3
- IMSE 881 - Linear Programming Credits: 3
- PLAN 667 - Transportation Planning Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 710 - Sample Survey Methods Credits: 3

Design Option

- CE 680 - Economics of Design and Construction Credits: 3
- CE 771 - Travel Demand Modeling Credits: 3
- CE 728 - Advanced Geotechnical Design Credits: 3
- CE 751 - Hydraulics of Open Channels Credits: 3
- CE 816 - Selected Topics in Civil Engineering Credits: 1-18
- CE 822 - Shear Strength and Slope Stability of Soils Credits: 3
- CE 844 - Prestressed Concrete Design Credits: 3
- CE 872 - Transportation Safety Credits: 3
- CE 874 - Sustainable Transportation Asset Management Credits: 3
- IMSE 850 - Ergonomics (Human Factors) Engineering Credits: 3
- PLAN 667 - Transportation Planning Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 710 - Sample Survey Methods Credits: 3

Materials Option

- CE 680 - Economics of Design and Construction **Credits: 3**
- CE 728 - Advanced Geotechnical Design **Credits: 3**
- CE 741 - Civil Engineering Materials II **Credits: 3**
- CE 802 - Advanced Mechanics of Materials and Applied Elasticity **Credits: 3**
- CE 816 - Selected Topics in Civil Engineering **Credits: 1-18**
- CE 822 - Shear Strength and Slope Stability of Soils **Credits: 3**
- CE 828 - Advanced Seepage and Settlement Analysis in Soils **Credits: 3**
- CE 874 - Sustainable Transportation Asset Management **Credits: 3**
- ME 862 - Finite Elements **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**
- STAT 710 - Sample Survey Methods **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**

Elective Courses

Student may choose from a list of approved electives offered by the Civil Engineering graduate program or other departments, in consultation with the students' supervisory committee.

Research

- Report option only: CE 898 - Master's Report **Credits: 1-18** (2 hours required)
- Thesis option only: CE 899 - Master's Thesis **Credits: 1-18** (6 hours required)

Specialization area: Water Resources Engineering

Required Courses

At least 9 credit hours required from this list.

- CE 654 - Design of Groundwater Flow Systems **Credits: 3**
- CE 751 - Hydraulics of Open Channels **Credits: 3**
- CE 752 - Advanced Hydrology **Credits: 3**
- CE 803 - Numerical and Analytic Techniques for Engineers **Credits: 3**

Additional Courses

At least 6 credit hours required from this list.

- CE 625 - Principles of Geoenvironmental Engineering **Credits: 3**
- CE 725 - Seepage in Permeable Materials **Credits: 3**
- CE 762 - Water Treatment Processes **Credits: 3**
- CE 766 - Wastewater Engineering: Biological Processes **Credits: 3**
- CE 861 - Environmental Engineering Chemistry **Credits: 3**
- CE 866 - Advanced Wastewater Treatment **Credits: 3**

Elective Courses

Student may choose from a list of approved electives offered by the Civil Engineering graduate program or other departments, in consultation with the students' supervisory committee.

Research

- Report option only: CE 898 - Master's Report **Credits: 1-18** (2 hours required)
- Thesis option only: CE 899 - Master's Thesis **Credits: 1-18** (6 hours required)

Total Hours Required for Master's: 30

Computer Science

Dan Andresen, Head

Torben Amtoft, Graduate program director

2184 Engineering Hall

785-532-6350

Fax: 785-532-7353

csoffice@ksu.edu

<http://www.cs.ksu.edu/>

Current faculty research projects are funded by the National Science Foundation, U.S. Department of Agriculture, USDA - Agricultural Research Service - Plains Area, USDA - Research Education and Economics - National Institute of Food and Agriculture (NIFA), HHS - Food and Drug Administration (FDA), HHS - National Institutes of Health (NIH), U.S. Department of Energy, U.S. Air Force, DOD - Air Force - Air Force Office of Scientific Research (AFOSR), DARPA, Department of Transportation, Kansas Department of Education, Amazon, Rockwell Collins, University of Kansas Center for Research, Inc., Peak Technologies, RTI International, Mathinvestments, Inc., Pioneer Hi-Bred International, Inc., United Sorghum Checkoff Program, and National Technology & Engineering Solutions of Sandia LLC.

Objectives

The department is committed to excellence in scholarly activities and research; interdepartmental and interuniversity collaborative projects are particularly emphasized. Key research areas include: artificial intelligence, data science, programming languages, high assurance software, cyber-physical systems, cybersecurity, computation science, bioinformatics, databases, semantic web, software engineering, agent-oriented software systems, and robotics.

Research groups

Programming languages research in the department concentrates upon techniques and tools for designing, analyzing, and implementing programming languages. Specific topics include abstract interpretation, algebraic semantics, compiler synthesis from denotational semantics definitions, full abstraction, lambda definability, type theory, probabilistic semantics, concurrency theory, and model checking.

High assurance software research in the department focuses on developing techniques for designing and implementing software that are able to establish with high levels of assurance that the resulting systems satisfy their requirements and are free from

unanticipated faults. Automated tool frameworks for software modeling, software architecture, and component integration techniques for large scale systems of systems are being developed.

Research in cyber-physical systems is focusing on developing theory and tools for sensor network, parallel and grid computing, and distributed, cooperative robotics. Specific topics include tools to automate the design, analysis and deployment of sensor systems, tools for solving computational intensive scientific problems via parallel computing, and to effectively utilize the available computation, storage and network resources in a cluster of machines, and frameworks to control large numbers of heterogeneous, semi-autonomous robots in dynamic, uncertain environments in order to cooperatively perform a task.

Computational Science and Informatics research in the department involves the application of artificial intelligence heuristics, algorithms, data structures, and database concepts and processes to specific domains. For example, in bioinformatics – the study of how biological data is stored, retrieved, and analyzed to solve a specific biological research problem, computer scientists use data mining techniques and algorithms to find patterns in biological data that enable scientists to derive structure and relate structure to the function of a specific gene. Research is being performed by several interdisciplinary teams of domain specialists and informatics experts from Computer Science.

Cybersecurity research in the department is addressing fundamental issues in integrity, confidentiality and availability of data/systems resources, and practical issues in network and system security defense. Methodologies are being developed to provide high assurance through development of tractable static analyses that cope with real-world information policies, complementing and leveraging the explicit access controls on which current systems rely. Active research programs are going on in enterprise-network security management and defense, including attack graph-based security analysis, intrusion detection, and security metrics.

The department's software engineering research encompasses measures, specification, testing and analysis of sequential and concurrent software systems. Software measures research applies measurement theory to the development of practical software measures and specification methodologies. Software specification research uses formal approaches for describing the intended behavior of complex systems. Testing and analysis research involves development and evaluation of approaches for validation and verification of software. Research that spans these areas is ongoing and ranges from theoretical developments, through construction of toolsets that enable application of research results, to empirical evaluation of software engineering techniques.

The robotics laboratory supports research into software engineering approaches to building robust autonomous robotics software, including multi-agent solutions. Teams from the lab have placed first, second, and third in the annual AAAI Robotics competitions.

The agent-oriented software engineering research group is developing widely recognized foundations and engineering tools that support construction of systems organized as collections of independent and autonomous "agents", and is demonstrating the effectiveness of these techniques in domains of robotics and sensor networks.

Database research in the department focuses on basic theoretical and practical issues in mainstream database systems, as well as on issues lying at the border of databases and knowledge and data engineering (KDE). Topics include database and knowledge base design, database security and integrity, static and dynamic integrity constraints, extensible database management systems, temporal and active databases, data warehousing, online analytical processing (OLAP), data cleansing, data mining, knowledge discovery in databases (KDD), and information visualization.

The department's artificial intelligence (AI) research focuses on semantic web, data science, knowledge representation for reasoning and planning under uncertainty, machine learning for knowledge discovery and data mining, intelligent information retrieval, web and clickstream mining, expert systems, and intelligent control systems, also known as real-time intelligent systems. Methodologies range over inductive, analytical, and multistrategy learning and include research programs in artificial neural networks, genetic and evolutionary computation, and probabilistic learning and inference. Application areas include decision support; human-computer intelligent interaction (HCII); industrial, commercial and defense automation; autonomous robotics; and multi-agent systems.

Research facilities

The department maintains a large network of servers and workstations connected to Internet and Internet2. The servers include Sun servers running Solaris, Windows based PC servers, and a Beowulf cluster system consisting of 35 nodes totaling 210 processors running Linux. The department also has an 80 processor NCR Teradata database server with 1.6 terabytes of online storage. The workstations include systems running Solaris and PCs running Windows and Linux. Many software packages are available including CASE tools, embedded system and robotics system development environments, and database systems.

Additional campus-wide computer facilities are provided by the university's Computing and Network Services organization and the college of Engineering, including Sun servers and PC based workstations throughout campus.

Admission

Applicants with degrees in other areas must have mathematical maturity as demonstrated by courses in logic or discrete mathematics, plus courses in programming, data structures, and algorithms, and either a course or experience in software engineering.

In addition to the requirements for admission to the M.S. program, an applicant for the Ph.D. program must have a master's degree in computing science or a bachelor's degree plus strong, advanced computing knowledge. Solid preparation in theoretical computer science and advanced knowledge in one or more applications areas (compiling, operating systems, database systems, etc.) are also required.

Accelerated

Accelerated Computer Science (BS)/Computer Science (MS)

The accelerated Accelerated Computer Science (BS)/Computer Science (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Computer Science degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Before acceptance into the accelerated degree program, the student will select a major professor from the Graduate Faculty in Computer Science. The major professor should agree to supervise the student's graduate program and provide a reference letter, including their plan to supervise, in the Graduate School application. The rest of the application process will be the same as for the traditional M.S. degree except completion of the B.S. degree is not required. The following steps are required:

KSU graduate application form completed online before semester of enrollment. In general, applicants are only considered for fall enrollment. Applicants should complete the K-State Graduate School application process. The applicant's statement of academic objectives must be submitted with the application. Three letters of reference and transcript(s) of all undergraduate work must be submitted with the application.

The graduate program will process the application of the student and forward it to the Graduate School, as currently occurs for students holding a B.S. who apply to the M.S. program. Should the student meet the requirements, provisional admission to the M.S. program will be granted, pending the award of the B.S. degree. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The student will work closely with the major professor to form a supervisory committee and file a program of study by the end of the first full semester following the student's acceptance into the accelerated degree program, or the second semester of the student's junior year, whichever is later. The undergraduate advisor will advise the student in the academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress and preparation for the M.S. degree capstone (report or thesis). A typical M.S. program of study for students in the accelerated program would be identical to that for students in the traditional M.S. program: a report option requiring 30 hours including 2 credit hours of report and 1 credit hour of seminar or a thesis option requiring 30 hours including 6 credit hours of research. An oral presentation is required for each option and original research is required for the thesis option.

Note that CIS 705 can be substituted for CIS 505 to satisfy the programming language course requirement in the B.S. program. Also, CIS 751 can be substituted for CIS 551 in the B.S. program. Students who take CIS 505 or CIS 551 cannot take CIS 705 or CIS 751, respectively, to meet the M.S. program requirements. The graduate-level courses can be taken as either technical electives or unrestricted electives for the B.S. program.

Course Requirements

Computer Science (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CIS 705 - Programming Languages **Credits: 3**
- CIS 720 - Advanced Operating Systems **Credits: 3**
- CIS 730 - Principles of Artificial Intelligence **Credits: 3**
- CIS 751 - Computer and Information Security **Credits: 3**
- CIS 775 - Analysis of Algorithms **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Computer Science (BS)/Master of Business Administration (MBA)

The accelerated Accelerated Computer Science (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

The student must complete all requirements of the B.S. in computer science and all requirements of the MBA. Included in the B.S. degree program must be six hours of economics. The student may include up to nine hours of graduate credit from the MBA program to satisfy unrestricted electives, upper division electives, and/or tech electives, as appropriate, for the B.S. in computer science.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CIS 731 - Programming Techniques for Data Science and Analytics **Credits: 3**
- CIS 732 - Machine Learning and Pattern Recognition **Credits: 3**
- MIS 665 - Business Analytics and Data Mining **Credits: 3**
- MIS 670 - Social Media Analytics and Web Mining **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.

- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Computer Science (PHD)

The Ph.D. degree in Computer Science is offered through the Computer Science graduate program. Requirements include 90 semester hours of graduate-level credit. All work must be completed within seven years.

General requirements include: Completing the Breadth Requirement and passing the Research Proficiency Exam (Preliminary Examination); successfully presenting a research plan to one's supervisory committee at a research proposal meeting; and completing the research plan, writing a dissertation, and successfully defending the dissertation in an open forum.

Admission Requirements

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

General requirements include:

1. Completing the Breadth Requirement
2. Passing the Research Proficiency Exam (RPE)
3. Passing the Preliminary Examination
4. Completing a Proposal Defense
5. Writing a dissertation and successfully defending the dissertation in an open forum.

Course work requirements include:

- 24 hours of course credit at Kansas State University beyond the master's degree level
- 15 hours must be 800 level or above
- One or more courses in theoretical or fundamental topics
- At least 30 hours of Ph.D. research credits.

Breadth Requirement

The Breadth requirement requires demonstrating proficiency in six areas: Implementation, Languages, Systems, Applied CS, Foundations, and Algorithms.

The Breadth requirement must be completed by the end of the fifth semester. If the student fails to complete the Breadth Requirement within the specified time, the student must leave the Ph.D. program.

The student must receive a B or better in each course used to satisfy the Breadth Requirement. In addition, the overall average of all courses used to satisfy the Breadth Requirement must be at least 3.5.

Courses taken at KSU as part of a B.S. or M.S. degree, or approved courses from institutions with joint PhD program with the CS Department at KSU, can be used to satisfy the breadth requirement.

A single course cannot be used to satisfy the breadth requirement in more than one area.

In extenuating situations, outside experience or courses transferred from other institutions can be proposed to satisfy Breadth Requirements if approved by the Graduate Studies Committee.

Proficiency in Implementation Area

Proficiency in Implementation area can be demonstrated by completing one course from the following group:

- CIS 641 - Software Engineering Design Project **Credits: 3**
- CIS 690 - Implementation Project **Credits: 3**
- CIS 706 - Translator Design I **Credits: 3**
- CIS 722 - Operating System Practices **Credits: 3**
- CIS 736 - Computer Graphics **Credits: 3**
- CIS 801 - Translator Design II **Credits: 3**

Proficiency in Languages Area

Proficiency in Languages area can be demonstrated by completing one course from the following group:

- CIS 705 - Programming Languages **Credits: 3**
- CIS 706 - Translator Design I **Credits: 3**
- CIS 771 - Software Specification **Credits: 3**
- CIS 801 - Translator Design II **Credits: 3**
- CIS 806 - Semantics of Programming Languages **Credits: 3**

Proficiency in Systems Area

Proficiency in Systems area can be demonstrated by completing one course from the following group:

- CIS 720 - Advanced Operating Systems **Credits: 3**
- CIS 721 - Real-Time Systems **Credits: 3**
- CIS 722 - Operating System Practices **Credits: 3**
- CIS 725 - Advanced Computer Networks **Credits: 3**
- CIS 726 - Advanced World Wide Web Technologies **Credits: 3**
- CIS 750 - Advanced Computer Architecture **Credits: 3**
- CIS 751 - Computer and Information Security **Credits: 3**
- CIS 755 - Systems Security **Credits: 3**

Proficiency in Applied CS Area

Proficiency in Applied CS area can be demonstrated by completing one course from the following group:

- CIS 655 - Security and Reliability of Computing Systems **Credits: 3**

- CIS 730 - Principles of Artificial Intelligence **Credits: 3**
- CIS 740 - Software Engineering **Credits: 3**
- CIS 744 - Advanced Software Analysis and Design **Credits: 3**
- CIS 761 - Data Base Management Systems **Credits: 3**

Proficiency in Foundations Area

Proficiency in Foundations area can be demonstrated by completing the following course:

- CIS 770 - Formal Language Theory **Credits: 3**

Proficiency in Algorithms Area

Proficiency in Algorithms area can be demonstrated by completing the following course:

- CIS 775 - Analysis of Algorithms **Credits: 3**

Research Proficiency Exam

Ph.D. students must pass a Research Proficiency Exam (RPE). The RPE is meant to judge the student's ability to conduct research, and is expected to lead the student into PhD research.

The RPE will be one-semester long, and during this semester, the student must make three public presentations and produce a written report. The gap between the presentations must be at least four weeks and the last presentation must be before finals week.

Students must have their Program of Study filed with the Graduate School before requesting to schedule the first presentation.

For the RPE, the student must also form an RPE Committee consisting of three faculty members from the Department of Computer Science. Members of the PhD Supervisory Committee (as listed in the Program of Study form) belonging to the Department of Computer Science must be included in the RPE Committee. The Major Professor cannot be the chair of the RPE committee; instead, the chair must be the one of the other two members who has highest academic rank (if they have the same rank, the one who has been longest at the Department of Computer Science).

The student will start the RPE process by choosing an area of study in consultation with the Major Professor. The first presentation should include a literature survey of the area, an open problem, and a proposed approach. At the end of the first presentation, the RPE Committee will approve the plan or suggest an alternative problem. The second presentation should present the progress made towards addressing this problem. The third presentation must be accompanied by a written report containing literature survey, a description of the problem addressed, the technical approach used to solve the problem, and the results and their interpretation. At the end of the first and second presentations, the student will be provided feedback on his/her progress and expectations for the next presentation. After the final RPE presentation, the student's work will be judged as "pass" or "fail" by the RPE Committee. Positive votes from a majority of the RPE Committee will constitute a "pass".

In case the RPE presentations take place prior to the Preliminary Examination, it shall be the sole responsibility of the PhD student to maintain a record of having completed the RPE. This entails having all members of the RPE committee sign a document stating that the student passed the RPE.

The RPE must be scheduled with the aim of completing it before the end of the fifth semester.

If the RPE is graded as "fail", then the student will have a second attempt, during which the RPE committee may choose to give the student a different problem to work on. The student must pass the second attempt before the end of the semester following the first attempt. (Thus it may happen that a student does not complete the RPE until the end of the sixth semester.) Otherwise, the student must leave the PhD program.

Preliminary Examination

The student must request a Preliminary Examination Ballot from the Graduate School within one semester of completing the RPE and Breadth Requirements, and no later than at the end of the sixth semester. The Preliminary Examination Presentation should include a presentation of the plan for the dissertation research and must be approved by the supervisory committee. The Preliminary Examination Presentation may be completed in conjunction with the final RPE Presentation. Upon passing the Preliminary Examination, the student will be admitted to candidacy for the Ph.D. degree by the Graduate School.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Computer Science (MS)

The M.S. degree in Computer Science requires a minimum of 30 credit hours of graduate level course work. The degree program can take one of three forms: a report option requiring 30 hours including 2 credit hours of report and 1 credit hour of seminar; a thesis option requiring 30 hours including 6 credit hours of research; and a non-thesis/report option requiring 30 hours of computer science classes. An oral presentation is required for each option and original research is required for the thesis option.

Course Requirements

A culminating experience is required. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

An MS candidate must either 1) defend a thesis (6 credit hours), 2) defend a report (3 credit hours), or 3) graduate on coursework only in which case an exit interview is required as the culminating experience.

Required Courses

The student must receive a grade of B or better for all classes assigned by the Graduate Studies Committee and for each course used to satisfy the following requirements.

Course work must include a course from each of the following areas:

Languages:

- CIS 705 - Programming Languages **Credits: 3**
- CIS 706 - Translator Design I **Credits: 3**

- CIS 771 - Software Specification Credits: 3
- CIS 801 - Translator Design II Credits: 3
- CIS 806 - Semantics of Programming Languages Credits: 3

Systems:

- CIS 720 - Advanced Operating Systems Credits: 3
- CIS 721 - Real-Time Systems Credits: 3
- CIS 722 - Operating System Practices Credits: 3
- CIS 725 - Advanced Computer Networks Credits: 3
- CIS 726 - Advanced World Wide Web Technologies Credits: 3
- CIS 750 - Advanced Computer Architecture Credits: 3
- CIS 751 - Computer and Information Security Credits: 3
- CIS 755 - Systems Security Credits: 3

Applied CS:

- CIS 655 - Security and Reliability of Computing Systems Credits: 3
- CIS 730 - Principles of Artificial Intelligence Credits: 3
- CIS 740 - Software Engineering Credits: 3
- CIS 744 - Advanced Software Analysis and Design Credits: 3
- CIS 761 - Data Base Management Systems Credits: 3

Theory:

- CIS 770 - Formal Language Theory Credits: 3
- CIS 775 - Analysis of Algorithms Credits: 3

Implementation:

Every student must successfully complete a significant implementation under the guidance of a faculty member. This will usually be done as a part of CIS 641, CIS 690, CIS 706, CIS 722, CIS 736, CIS 801. The effort must be certified by a faculty member and the student must request this in writing at the beginning of the course.

Specialization:

Any course numbered CIS 800 or higher except seminar, projects, and research courses. No course may be used to satisfy more than one requirement.

Total Hours Required for Master's: 30

Electrical and Computer Engineering

Mike Wiegers Department of Electrical and Computer Engineering

Don Gruenbacher, Head
Andrew Rys, Director of graduate studies

1701D Platt St
3108 Engineering Hall
785-532-5600
Fax: 785-532-7353
grad@ece.ksu.edu
http://www.ece.ksu.edu

Program

The Mike Wiegers Department of Electrical and Computer Engineering offers courses and programs leading to master of science and doctor of philosophy degrees. Several areas of specialization are available at the graduate level. Major areas are bioengineering, communications systems, computer engineering, control systems, electromagnetics, instrumentation, power systems, renewable energy signal processing, and solid-state electronics.

At the master's level there are three options: thesis, report, and course work only. All require a minimum of 30 hours of credit. The Ph.D. program requires 60 hours beyond the master's, including original research of sufficient quality and importance to merit publication in a refereed journal.

For information about the Ph.D. program, see the Engineering section of this catalog. ([Click here](#))

Research facilities

The department is located in the engineering complex. This facility has been designed to provide an excellent academic environment. There are numerous well-equipped instructional and research laboratories including the computer laboratories, signal and image processing laboratory, electronics lab, communication circuits laboratory, bioengineering laboratory, energy systems laboratory, and solid-state electronics laboratory.

Extensive computing resources are available to the department. These cover a wide range including: PCs, workstations, and servers. Access to supercomputers is also available.

Financial support

Research and teaching assistantships are available on a competitive basis. Students on half-time assistantships pay in-state fees. Graduate students have either teaching, research, or both responsibilities.

Career opportunities

Graduate study in electrical engineering will prepare engineers to pursue careers in many diverse, high technology areas. These careers can be in government, industry, or academia. Possible areas of employment are communications systems, medical equipment design, computer design and applications, power generation and distribution, automotive systems, manufacturing systems, and so on. Electricity and electronics are so necessary for our quality of life that it is difficult to find an area in which electrical engineers and computer engineers are not employed.

Doctor of Philosophy

Electrical and Computer Engineering (PHD)

The doctorate program is a research-oriented curriculum and requires 60 hours beyond the master's degree, including original research of sufficient quality and importance to merit publications in refereed journals. Graduates of the program find employment in national laboratories, academic institutions, government facilities and private industries.

Offered through the Electrical and Computer Engineering. Please see the ECE website for detailed information regarding admission.

Admission Requirements

Course Requirements

Credit Hour Requirements

A total of 90 graduate credit hours of work are required beyond the Bachelor's degree. Up to 30 credit hours from an applicable master's degree can be applied towards the 90 credits required for the Ph.D. degree. The Doctoral Program of Study should normally follow these guidelines:

1. A minimum of 30 hours of doctoral research credit.
2. A minimum of 15 hours of graded coursework at the 800 level or above.
3. No 500-level courses in Electrical and Computer Engineering may be taken for credit. For coursework beyond the master's degree, no more than 6 credit hours of 500-level courses outside ECE are permitted. For students who bypass the master's degree, no more than 12 credit hours of 500 level courses outside ECE are permitted.
4. Transfer credits are allowed within the conditions specified by the Graduate Handbook.

Graduate Seminar

All on-campus graduate students are required to attend the departmental graduate seminar and will be required to give a seminar presentation on their thesis or report. Their enrollment in the zero credit hour seminar course, ECE 896, is required each semester.

Preliminary Examination

The preliminary examination must be completed at least 7 months before the final oral examination. Once the supervisory committee and the student decide when the examination is to be taken, the student should notify the Graduate School one month before the scheduled date with a completed Preliminary Examination form.

Final Examination

The request for final examination must be filed in accordance with the requirements of the Graduate School.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Electrical and Computer Engineering (MS)

Offered through the Electrical and Computer Engineering department. Please see the ECE website for detailed information regarding admission.

Course Requirements

All options require at least 18 credit hours on the program of study to be at the 700 level or above. The student, with the concurrence of the major advisor and/or the department head, may select one of the options below leading to the MS degree.

At the option of the major advisor, graduate research assistants may be required to select option (1). For the course work option, identified programs of study for the major areas of specialization should be followed when available.

Graduate Handbook

All students are expected to be familiar with the latest version of the graduate handbook. It covers general requirements, the supervisory committee, the program of study, course requirements, probation and dismissal, residence requirements, thesis and reports, and the final examination. Graduate Handbook is available on the Graduate School web page.

Graduate Seminar

All on-campus graduate students are required to attend the departmental graduate seminar and will be required to give a seminar presentation on their thesis or report. Their enrollment in the zero credit hour seminar course, ECE 896, is required each semester.

Graduate Committee/Program of Study

During the first semester of graduate study the student will choose a major advisor, and then in conjunction with the major advisor, select a graduate committee and develop a tentative plan of study for a graduate program in the ECE Department. The program of study must be completed and forwarded to the Graduate School by the end of the second semester of enrollment.

Required Courses

Two Courses are required from the following list:

- ECE 830 - Advanced Systems Theory **Credits: 3**
- ECE 840 - Computer Engineering Methods for Analysis, Simulation, and Design **Credits: 3**
- ECE 841 - Network Theory **Credits: 3**
- ECE 861 - Applied Probability Theory & Random Processes **Credits: 3**

Thesis Option Courses

6 credit hours of thesis research, ECE 899.

- **ECE 899 - Master's Thesis Credits: 1-18**

For the Thesis Option, exclusive of thesis research, at least 15 hours must be taken in Electrical and Computer Engineering. The remaining graduate courses should be prudently selected by the student in consultation with the student's supervisory committee. A poster that meets department guidelines will also be required.

Report Option Courses

2 credit hours of report research, ECE 898.

- **ECE 898 - Master's Report Credits: 1-18**

For the Report Option, exclusive of report research, at least 15 hours must be taken in Electrical and Computer Engineering. The remaining graduate courses should be prudently selected by the student in consultation with the student's supervisory committee.

Coursework Only Option Courses

A minimum of 12 additional hours of graduate level ECE courses are required for all students including 6 hours of laboratory courses. Students entering from an ABET accredited program may have this requirement waived. The remaining 12 hours may be selected from ECE graduate courses or other supporting areas as determined by the student's supervisory committee.

The coursework only option for this program does not require a culminating experience.

Final Examination

The request for final examination must be filed in accordance with the requirements of the Graduate School.

Total Hours Required for Master's: 30

Industrial and Manufacturing Systems Engineering

Bradley A. Kramer, Head

Jessica L. Heier Stamm, Director of graduate studies

2061 Rathbone Hall

785-532-5606

Fax: 785-532-3738

imse@k-state.edu

<http://www.imse.ksu.edu/>

Academic programs

The department consists of 10 graduate faculty members and more than 50 graduate students. The department performs research in manufacturing systems, operations research and human factors (ergonomics). From previous data over 80% of on-campus Ph.D. students receive assistantships.

The Department of Industrial and Manufacturing Systems Engineering offers the following degrees/options at the graduate level:

- Accelerated B.S./M.S. in Industrial Engineering (BS/MSIE)
- M.S. in Industrial Engineering (MSIE)
- M.S. in Operations Research (MSOR)
- Master of Engineering Management (MEM)
- Ph.D. in Industrial Engineering (PhDIE)

Students that complete a master's degree are able to:

- Solve advanced engineering problems using discipline appropriate math, science, computation and analysis skill
- Synthesize and evaluate information
- Demonstrate advanced knowledge in area of specialization
- Recognize and apply state of the art techniques in the field
- Communicate effectively in both written and oral forms

Besides the above skills, students who complete a Ph.D. can also

- Plan and conduct scholarly activities that make original contributions to the knowledge base in the field of study.

The BS/MSIE degree is only open to students that are currently pursuing a BSIE at KSU. Since there is some overlap between undergraduate and graduate study, some graduate courses will satisfy the degree requirements for the undergraduate degree. A maximum of 9 credit hours from the M.S.I.E. degree can be counted toward the B.S.I.E. degree.

The MSIE program can be completed with either a thesis or coursework only option. Both options require the completion of 30 graduate credit hours. The MSIE degree is offered to on-campus and online students.

The MSOR program can be completed with either a thesis or coursework only option. Both options require the completion of 30 graduate credit hours. The MSOR degree is offered to on-campus and to online students.

The MEM degree is a course-work only program that is designed for working professionals. This program requires the completion of 30 graduate credit hours. The degree is offered to online students.

The PhDIE degree requires either 60 hours of graduate credit beyond the M.S. degree or 90 graduate credit hours without an M.S. degree. 9 out of 30 credit hours after M.S. degree will be restricted to pre-specified IMSE courses. A significant original research project documented in the form of an acceptable dissertation is required. The dissertation must be of sufficient quality and importance to merit publication in a refereed journal.

Research emphases

Research in the Department of Industrial and Manufacturing Systems Engineering is conducted in five primary areas.

Ergonomics

Improve how humans work with machines and each other. Develop safe and productive work environments.

Manufacturing systems

Design and improve manufacturing systems with respect to product quality and system productivity.

Operations research

Expand the methodologies available for solving decision problems in engineering, economics, business and social systems. Incorporates applied mathematics and computer technologies into solution methods.

Quality engineering

Control manufacturing cost through manufacturing process improvement. Diagnose quality problems to improve product quality.

Uncertainty representation and reasoning

Improve engineering decision making, which is based on many uncertainties and approximations.

Major research facilities and equipment

The department of engineering has well-equipped laboratories supporting some of its research activities. Additional research is conducted in the field using industrial facilities.

The ergonomics laboratory contains measurement apparatus for assessing stress levels imposed on human workers by various job designs and work environments.

The manufacturing processes laboratory consists of a wide range of manufacturing process equipment that can support research involving basic manufacturing processes. The laboratory includes numerous lathes and milling machines, a foundry with gas-fired and electric induction furnaces, molten salt heat treat facility, gas-flame metal cutting and joining processes, various welding processes, and material properties measurement equipment.

The cyber manufacturing laboratory is a modern, well-equipped computer controlled manufacturing system. Equipment includes 3D printers, computer numerically controlled (CNC) machining centers, robots, programmable logic controllers, a programmable conveyor, and computer workstations for computer aided manufacturing.

The departmental computing laboratories are modern and well equipped. IMSE students have access to these labs 24 hours a day.

Financial support

Financial support for teaching and research assistants is available. Awards are made on a competitive basis. The awarding of financial assistance is separate and distinct from admission to the graduate program. Many students choose to enroll without financial assistance to pursue the various graduate degrees and options in industrial and manufacturing systems engineering.

Accelerated

Accelerated Industrial Engineering (BS)/Industrial Engineering (MS)

The accelerated Accelerated Industrial Engineering (BS)/Industrial Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Industrial Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.

- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

Since there is some overlap between undergraduate and graduate study, some graduate courses will satisfy the degree requirements for the undergraduate degree. A maximum of 9 credit hours from the M.S.I.E. degree can be counted toward the B.S.I.E. degree. Some additional conditions are:

The student must complete all B.S.I.E. undergraduate requirements with the exception that up to 9 credit hours of IMSE 600/700 level classes taken for graduate credit can also count toward undergraduate degree requirements. The student must complete all M.S.I.E. requirements as specified in the Graduate Catalog.

Once an individual is admitted to the accelerated B.S./M.S.I.E. degree program, the student should consult the graduate handbook for policies and procedures for graduate degrees, which include: supervisory committee, final examination, thesis defense, etc. The student's supervisory committee must approve the program of study, which is that student's graduation requirements.

In the event that a student begins this program, but does not choose to finish it, he/she may change up to 9 credit hours of the graduate classes they may have earned to completed the program to undergraduate credit to complete the requirements for the B.S.I.E. degree.

Additional Procedures: For at least one year, the student must be enrolled in IMSE 892 - Graduate Seminar. Each semester a student in this program must enroll in either:

IMSE 892 - Graduate Seminar
or
IMSE 015 - Engineering Assembly

For more information about Program Format and Minimum Requirements (effective Fall 2008).

Course Requirements

Industrial Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- IMSE 641 - Quality Engineering **Credits: 3**
- IMSE 643 - Industrial Simulation **Credits: 3**
- IMSE 685 - Principles of Manufacturing Information Systems **Credits: 3**
- IMSE 710 - Transportation Logistics **Credits: 3**
- IMSE 780 - Methods of Operations Research **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Industrial Engineering (PHD)

Industrial Engineering (PhD)

Admission Requirements

Graduation Requirements

Additional graded courses must be courses that are awarded a letter grade.

Additional credit hours can be graded courses or taken for credit/no credit such as Ph.D. research.

If the Graduate School approves less than 30 hours of credit for a MS, then the remainder of the 30 hours (up to a maximum of 24 hours) must be taken as additional graded courses. These additional hours must be graded courses.

*A student may satisfy a core course requirement by passing an examination. In such a situation, the student may take an additional 3 hours of graduate graded courses in place of a core course.

Actual degree requirements will be summarized on approved Program of Study.

Credits from MS degree other than industrial engineering are determined on a case-by-case basis. If a student receives a 'C' or worse in any core courses, then he/she must retake the course until a satisfactory grade is obtained.

Each semester a student must enroll in IMSE 892 Graduate Seminar (0 credit hours).

The student must have at least 15 hours of 800 or above graded courses and no more than 6 credits may be at the 500 level.

Continuous enrollment required.

Course Requirements (90 credit hours)

With an MS Degree

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Select One Course from 5 of 6 of the Following Core Areas (15 credit hours):

Optimization

- IMSE 780 - Methods of Operations Research Credits: 3
OR
- IMSE 881 - Linear Programming Credits: 3
OR
- IMSE 882 - Network Flows and Graph Theory Credits: 3

Stoch. Proc.

- IMSE 865 - Simulation of Industrial Management Systems Credits: 3
OR
- IMSE 866 - Applied Stochastic Processes Credits: 3
OR
- IMSE 971 - Industrial Queuing Processes Credits: 3

Statistics

- IMSE 841 - Advanced Topics in Quality Engineering Credits: 3
OR
- STAT 713 - Applied Linear Statistical Models Credits: 3
OR
- STAT 720 - Design of Experiments Credits: 3
OR
- STAT 722 - Experimental Design for Product Development and Quality Improvement Credits: 3

Prod. and Inv.

- IMSE 811 - Advanced Production and Inventory Control Credits: 3

Ergo. and Dec. The.

- IMSE 751 - Normative Theory of Decisions and Games Credits: 3
OR
- IMSE 822 - Advanced Engineering Economy Credits: 3
OR
- IMSE 850 - Ergonomics (Human Factors) Engineering Credits: 3

Manufacturing

- IMSE 825 - Tribology in Manufacturing Credits: 3
OR
- IMSE 868 - Manufacturing Processes for Semiconductor Materials and Devices Credits: 3

Maximum Credit for MS (30 credit hours)

Additional Credit Hours (15 credit hours)

Ph.D. Research (30 credit hours)

Without a MS Degree

Select One Course from 5 of 6 of the Following Core Areas* (15 credit hours):

Optimization

- IMSE 780 - Methods of Operations Research **Credits: 3**
OR
- IMSE 881 - Linear Programming **Credits: 3**
OR
- IMSE 882 - Network Flows and Graph Theory **Credits: 3**

Stoch. Proc.

- IMSE 865 - Simulation of Industrial Management Systems **Credits: 3**
OR
- IMSE 866 - Applied Stochastic Processes **Credits: 3**
OR
- IMSE 971 - Industrial Queuing Processes **Credits: 3**

Statistics

- IMSE 841 - Advanced Topics in Quality Engineering **Credits: 3**
OR
- STAT 713 - Applied Linear Statistical Models **Credits: 3**
OR
- STAT 720 - Design of Experiments **Credits: 3**
OR
- STAT 722 - Experimental Design for Product Development and Quality Improvement **Credits: 3**

Prod. and Inv.

- IMSE 811 - Advanced Production and Inventory Control **Credits: 3**

Ergo. and Dec. The.

- IMSE 751 - Normative Theory of Decisions and Games **Credits: 3**
OR
- IMSE 822 - Advanced Engineering Economy **Credits: 3**
OR
- IMSE 850 - Ergonomics (Human Factors) Engineering **Credits: 3**

Manufacturing

- IMSE 825 - Tribology in Manufacturing **Credits: 3**
OR
- IMSE 868 - Manufacturing Processes for Semiconductor Materials and Devices **Credits: 3**

Additional Graded Courses (24 credit hours)

Additional Credit Hours (21 credit hours)

Ph.D. Research (30 credit hours)

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Engineering Management

Master of Engineering Management (MEM)

Career advancement in the field of engineering often requires more than just exemplary technical skills. Employees need advanced training in topics such as project management, resource allocation and quantitative problem-solving. The online Master of Engineering Management teaches you management skills designed specifically for engineers. You will gain the economic, technical and human resource perspectives used to inform the technical managerial decisions you will face in your career.

Designed for working professionals, this online master's degree is offered 100% online.

[Click here to view the Industrial and Manufacturing Systems Engineering graduate page.](#)

Admission Requirements

To pursue the MEM degree, the student must meet the KSU Graduate School admissions requirements, have a B.S. degree in engineering, mathematics, or physical science, and have taken at least one course each in calculus and statistics. Students must have at least three years of full-time industrial (work) experience by the time they complete the program.

Master of Engineering Management is an online program only. This program is designed to be a part-time program and typically requires 2 to 4 years to complete.

Students not meeting the above requirements may be considered if they can demonstrate equivalent evidence of an appropriate background. Contact the Department of Industrial and Manufacturing Systems Engineering to discuss.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses (15 hours)

Select any 5 of the 6.

- IMSE 605 - Advanced Industrial Management Credits: 3

- IMSE 680 - Quantitative Problem Solving Techniques **Credits: 3**
- IMSE 710 - Transportation Logistics **Credits: 3**
- IMSE 806 - Engineering Project Management **Credits: 3**
- IMSE 811 - Advanced Production and Inventory Control **Credits: 3**
- IMSE 822 - Advanced Engineering Economy **Credits: 3**

Electives Courses (15 hours)

Electives are any course not utilized as a core course on the program of study. These may be from IMSE or other departments. For example, courses in psychology, business, and other engineering disciplines may broaden and enhance engineering management skills.

Guidelines and Additional Requirements

* Actual degree requirements will be summarized on an approved plan of study. Some general guidelines include:

- At most 6 hours can be transferred from another school, unless prior approval is given
- No more than 6 hours can be taken from an outside department without prior permission
- Courses in the IMSE department must be above the 600 level
- Courses outside the department must be above the 500 level
- No more than 6 hours can be taken at the 500 level

** Students on-campus are required to enroll in the graduate seminar each semester

** Besides the above academic requirements, a graduating student must have at least 3 years of full-time work experience.

Total Hours Required for Master's: 30

Master of Science

Industrial Engineering (MS)

Industrial engineers use mathematical, scientific, and analytics skills to solve complex business problems in a number of industries. The industrial engineering master's degree program is offered either in-person or online, and there are coursework-only and thesis options.

[Click here to view the Industrial and Manufacturing Systems Engineering graduate page.](#)

Admission Requirements

To pursue the Industrial Engineering M.S. through the Industrial and Manufacturing Systems Engineering graduate program, students must meet the KSU Graduate School admissions requirements, hold a B.S. degree in engineering, mathematics, or physical science and be versed in several of the basic areas of industrial engineering. Non-industrial engineering undergraduates may require 6 semester credit hours of prerequisite courses. GRE scores are required for all students who apply, unless they will have completed an undergraduate degree from an ABET-accredited program.

An entering M.S.I.E. student is expected to have proficiency in computer programming, linear programming and statistics. Students failing to meet these expectations may be required to take some prerequisite courses.

Course Requirements

- Actual degree requirements will be summarized on an approved plan of study. Some general guidelines include:
 - At least 60 percent of classes must be above the 700 level
 - No more than 6 credit hours can be taken outside the IMSE department without prior permission
 - Courses in the IMSE department must be above the 600 level
 - Courses outside the department must be above the 500 level
 - No more than 6 hours can be taken at the 500 level.

****Students on-campus are required to enroll in the graduate seminar each semester**

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

Students are required to take 9-12 hours of core courses. To graduate, a student may receive at most one C in all of the core courses (no D's or F's are allowed). This may require some students to retake core courses.

Option 1 (9 credit hours):

- IMSE 641 - Quality Engineering **Credits: 3**
- IMSE 780 - Methods of Operations Research **Credits: 3**
- IMSE 811 - Advanced Production and Inventory Control **Credits: 3**

Option 2 (12 credit hours):

- IMSE 641 - Quality Engineering **Credits: 3**
- IMSE 811 - Advanced Production and Inventory Control **Credits: 3**
Two of the following courses totaling 6 credit hours:
 - IMSE 710 - Transportation Logistics **Credits: 3**
 - IMSE 751 - Normative Theory of Decisions and Games **Credits: 3**
 - IMSE 752 - Multiple Criteria Decision Analysis **Credits: 3**
 - IMSE 760 - Stochastic Calculus Financial Engineering **Credits: 3**
 - IMSE 810 - Industrial Logistics Engineering **Credits: 3**
 - IMSE 830 - Applied Fuzzy Set Theory **Credits: 3**
 - IMSE 842 - Reliability Theory **Credits: 3**
 - IMSE 865 - Simulation of Industrial Management Systems **Credits: 3**
 - IMSE 866 - Applied Stochastic Processes **Credits: 3**
 - IMSE 881 - Linear Programming **Credits: 3**
 - IMSE 882 - Network Flows and Graph Theory **Credits: 3**
 - IMSE 884 - Integer Programming and Combinatorial Optimization **Credits: 3**
 - IMSE 971 - Industrial Queuing Processes **Credits: 3**
 - IMSE 976 - Scheduling Theory **Credits: 3**
 - IMSE 982 - Nonlinear Programming **Credits: 3**
 - IMSE 991 - Advanced Topics in Decision Theory **Credits: 3**

Elective Courses

- Thesis option: 15 credit hours if Required Courses Option 1; 12 credit hours if Option 2
- Coursework only option: 21 credit hours if Required Courses Option 1; 18 credit hours if Option 2

Thesis Option Courses

- IMSE 899 - Master's Thesis **Credits: 1-18** (6 credit hours)

Total Hours Required for Master's: 30

Operations Research (MS)

Operations research is the discipline focused on using data to make better decisions through the application of descriptive, predictive, and prescriptive analytics tools. The operations research master's degree program is designed to prepare students for impactful roles in every sector. The degree is offered either in-person or online, and there are coursework-only and thesis options.

[Click here to view the Industrial and Manufacturing Systems Engineering graduate page.](#)

Admission Requirements

To pursue the Operations Research M.S. through the Industrial and Manufacturing Systems Engineering graduate program, students must meet the KSU Graduate School admissions requirements, have a baccalaureate degree, and have a strong background in applied mathematics including calculus and linear algebra. The student must also have completed 3 semester credits each in introductory statistics (equivalent to K-State's STAT 510) and introductory operations research (equivalent to K-State's IMSE 560 or IMSE 680)*, and have knowledge of computer programming (equivalent to K-State's CIS 200 or CIS 209). Otherwise, appropriate remedial courses will be required. GRE scores are required for all students who apply, unless they will have completed an undergraduate degree from an ABET-accredited program.

*If an entering student has not taken an introductory operations research course, the student should enroll in IMSE 680 - Quantitative Problem Solving Techniques, to gain this knowledge.

Course Requirements

	Thesis	Course Work
Operations Research Core Courses	9	9
Additional Operations Research Courses	3	6
Electives	12	15
Thesis	6	0
IE Seminar	0	0
TOTAL GRADUATE CREDITS	30	30

Required Courses

Continuous Optimization: 1 course required

- IMSE 881 - Linear Programming **Credits: 3**
OR
- IMSE 982 - Nonlinear Programming **Credits: 3**

Discrete Optimization: 1 course required

- IMSE 882 - Network Flows and Graph Theory **Credits: 3**
OR
- IMSE 884 - Integer Programming and Combinatorial Optimization **Credits: 3**

Stochastic Processes: 1 course required

- IMSE 842 - Reliability Theory **Credits: 3**
OR
- IMSE 865 - Simulation of Industrial Management Systems **Credits: 3**
OR
- IMSE 866 - Applied Stochastic Processes **Credits: 3**

Additional Required Courses

Thesis option: 3 credit hours

Coursework only option: 6 credit hours

- IMSE 643 - Industrial Simulation **Credits: 3**
- IMSE 751 - Normative Theory of Decisions and Games **Credits: 3**
- IMSE 752 - Multiple Criteria Decision Analysis **Credits: 3**
- IMSE 780 - Methods of Operations Research **Credits: 3**
- IMSE 830 - Applied Fuzzy Set Theory **Credits: 3**
- IMSE 976 - Scheduling Theory **Credits: 3**
- IMSE 990 - Advanced Topics in Operations Research **Credits: 1-6**
- IMSE 710 - Transportation Logistics **Credits: 3**
- IMSE 810 - Industrial Logistics Engineering **Credits: 3**
- IMSE 991 - Advanced Topics in Decision Theory **Credits: 3**

Elective Courses

Thesis option: 12 credit hours

Coursework only option: 15 credit hours

Thesis Option Courses

6 credit hours

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Notes:

Actual degree requirements will be summarized on an approved plan of study. Some general guidelines include:

- At least 60 percent of classes must be above 700 level.
- No more than 6 hours can be taken from outside the department without prior permission.
- Courses in IMSE the department must be above the 600 level.
- Courses outside the department must be above the 500 level.
- No more than 6 hours can be taken at the 500 level.
- No course can count as both a core course and an additional operations research course.
- Students on-campus are required to enroll in the graduate seminar each semester.

Total Hours Required for Master's: 30

Mechanical and Nuclear Engineering

Alan Levin Department of Mechanical and Nuclear Engineering

Steve Eckels, Head

Mingjun Wei, Director of graduate studies

3002 Rathbone Hall

785-532-5610

Fax: 532-7057

grad@mne.ksu.edu

<http://www.mne.ksu.edu/graduate>

The department

The Mechanical and Nuclear Engineering Department at Kansas State University offers separate graduate programs in Mechanical Engineering and Nuclear Engineering both leading to M.S. and Ph.D. degrees. Our award-winning faculty are engaged in exciting and cutting-edge research projects in state of the art laboratories and research facilities, while our graduate students are excelling inside and outside of the classroom. Research areas and courses include a broad range of both traditional and emerging fields of Mechanical Engineering and Nuclear Engineering. With over \$5 million in research funding, almost all graduate students in our department receive graduate research assistantships (GRA). Several of our students receive graduate teaching assistantships (GTA) with 50-100 percent tuition waiver to help teach laboratory sections.

Applicants must have a bachelor's degree from an accredited institution. Although students with bachelor's degrees in Mechanical and/or Nuclear Engineering make up the bulk of our graduate student body, the department welcomes applicants from other fields including other engineering disciplines, mathematics, physics and chemistry. International applicants should also include GRE and TOEFL scores. GRE scores should be no less than 400 verbal (146 revised version), 650 quantitative (151 revised version), and 3.0 on analytical writing. TOEFL scores must be above 600 on the written exam or 250 on the computer exam. The IELTS may substitute for the TOEFL. IELTS scores are valid for two years and should be no less than 7.0.

Programs of study are flexible and tailored to the interests, backgrounds and career goals of each student. Courses from outside the department are often added to programs of study to enhance the student's experience. To see when MNE Graduate courses are offered, please view the MNE Graduate Course Rotation Schedule.

Degree options

Prospective students may apply for a graduate degree in either Mechanical Engineering or Nuclear Engineering. We offer the following degrees:

Mechanical Engineering	Nuclear Engineering
Master of Science Degree - The department offers three degree options at the master's level:	Master of Science Degree - The department offers three degree options at the master's level:
Master of Science Degree - Thesis option	Master of Science Degree - Thesis option
Master of Science Degree - Report option	Master of Science Degree - Report option
Master of Science Degree - Coursework option (on-campus and distance)	Master of Science Degree - Coursework option
Doctor of Philosophy Degree	Doctor of Philosophy Degree

Research facilities

In addition to a first-rate curriculum of graduate courses, cutting-edge graduate research projects are supported by state-of-the-art labs and research facilities. Labs and research centers associated with K-State's Mechanical and Nuclear Engineering Department include:

Laboratory facilities

- Applied Computation Laboratory
- Autonomous Vehicle Systems Laboratory
- Composites Laboratory
- Dynamic Systems and Controls Laboratory
- Heat Transfer Laboratory
- Internal Combustion Engines Laboratory
- Laser Diagnostics Laboratory
- Measurements and Instruments Laboratory
- Mechanical Testing and Evaluation Laboratory
- Neutron Activation Analysis Laboratory
- Nonlinear Controls Laboratory
- Radiation Detection Instructional Laboratory
- Radiation Measurement Applications Laboratory
- Refrigeration Laboratory
- Semiconductor Materials Analysis Laboratory

- Tate Neutron Activation Analysis Laboratory
- Wind Tunnel/Fluid Mechanics Laboratory

Research centers

- Environmental Air Quality Program
- Institute for Environmental Research
- National Gas Machinery Laboratory
- Semiconductor Materials and Radiological Technologies Laboratory (S.M.A.R.T.)
- Triga Mark II Nuclear Reactor Facility

Accelerated

Accelerated Mechanical Engineering (BS) / Master of Business Administration (MBA)

The accelerated Accelerated Mechanical Engineering (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- A student must meet with a graduate advisor in the College of Business before beginning the accelerated program.
- To meet prerequisites for MBA courses, the student's Social and Behavioral Science Electives in the Mechanical Engineering (BS) curriculum must be: ECON 110 Principles of Macroeconomics and ECON 120 Principles of Microeconomics.
- The MBA course ECON 815 Economic Analysis for Business will replace IMSE 530 Engineering Economic Analysis in the Mechanical Engineering (BS) curriculum.
- The graded MBA coursework must include: MANGT 710, MANGT 720, MIS 830, MANGT 860, MANGT 880, ACCTG 710, MKTG 705, FINAN 715, 6 credit hours from within the students chosen MBA Concentration Area, and GENBA 890 Business Capstone.

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ACCTG 710 - Foundations of Accounting **Credits: 3**
- ECON 630 - Introduction to Econometrics **Credits: 3**
- MANGT 710 - Operations and Supply Chain Management **Credits: 3**
- MKTG 705 - Marketing Concepts and Research **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Mechanical Engineering (BS)/Mechanical Engineering (MS)

The accelerated Accelerated Mechanical Engineering (BS)/Mechanical Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Mechanical Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- A student must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- All graduate courses must be C or better.

- A student must submit a program of study that lists the courses required to meet the master's degree requirements. The program of study must be approved by the student's supervisory committee and be submitted to the graduate school before the end of their second semester of graduate study.
- For the MSME, at least 18 hours, of the required minimum of 30 hours, must be at the 700 level and above.
- Once a student applies for this program, they must be continuously enrolled to complete this program. If a student is not enrolled for a fall or spring semester, this student loses the ability to count graduate credit hours toward their undergraduate degree.
- The graded coursework must include at least one 3 credit hour course in engineering mathematics or applied mathematical analysis. Courses that may be used to meet this requirement are: ME 760, ME 860, MATH 632, MATH 713, MATH 740, MATH 745, MATH 855, MATH 856, MATH 864, MATH 865, PHYS 801, PHYS 802.
- The MS candidate must satisfy the 75% attendance requirement (0 credit hour) in at least two semesters of ME 800 Graduate Seminar/Research Paper (refer to ME 800 course requirements).

Course Requirements

Mechanical Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ME 610 - Finite Element Applications in Mechanical Engineering **Credits: 3**
- ME 615 - Applications in Mechatronics **Credits: 3**
- ME 620 - Internal Combustion Engines **Credits: 3**
- ME 656 - Mechanical Vibrations **Credits: 3**
- ME 720 - Intermediate Fluid Mechanics **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Mechanical Engineering (BS)/Nuclear Engineering (MS)

The accelerated Accelerated Mechanical Engineering (BS)/Nuclear Engineering (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Nuclear Engineering degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- A student must complete 30 graduate credit hours with a graduate GPA of at least 3.0.
- All graduate courses must be C or better.
- A student must submit a program of study that lists the courses required to meet the master's degree requirements. The program of study must be approved by the student's supervisory committee and be submitted to the graduate school before the end of their second semester of graduate study.
- For the MSNE, at least 18 hours, of the required minimum of 30 hours, must be at the 700 level and above.
- Once a student applies for this program, they must be continuously enrolled to complete this program. If a student is not enrolled for a fall or spring semester, this student loses the ability to count graduate credit hours toward their undergraduate degree.
- The graded coursework must include at least one 3 credit hour course in engineering mathematics or applied mathematical analysis. Courses that may be used to meet this requirement are: ME 760, ME 860, MATH 632, MATH 713, MATH 740, MATH 745, MATH 855, MATH 856, MATH 864, MATH 865, MATH 866, MATH 867, PHYS 801, PHYS 802.
- A student obtaining the MSNE degree must take the following core courses: NE 612, NE 630, NE 690.
- The MS candidate must satisfy the 75% attendance requirement (0 credit hour) in at least two semesters of ME 800 Graduate Seminar/Research Paper (refer to ME 800 course requirements).

Course Requirements

Nuclear Engineering (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- ME 701 - Development of Computer Applications In Mechanical Engineering **Credits: 3**
- ME 760 - Engineering Analysis I **Credits: 3**
- NE 612 - Principles of Radiation Detection **Credits: 3**
- NE 630 - Nuclear Reactor Theory **Credits: 3**
- NE 690 - Radiation Protection and Shielding **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.

- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Mechanical Engineering (PHD)

Mechanical Engineering (PhD)

Admission Requirements

The Ph.D. requires at least three years of full-time study beyond the bachelor's degree, equivalent to at least 90 semester hours, including a dissertation representing at least 30 hours of research credit. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

The Ph.D. is awarded to candidates who have demonstrated unique ability as scholars and researchers as well as proficiency in communication. The degree also certifies that the candidate has displayed familiarity and understanding of the subject matter in the discipline and possesses the ability to make original contributions to knowledge.

Course Requirements

The Doctoral Program of Study must include:

a) a minimum of 15 hours of graded coursework beyond the Master's degree (all 15 hours MUST be at the 800 level or above, in addition to doctoral research credit hours) for candidates entering the Ph.D. program with a Master's degree.

OR

a minimum of 30 hours of graded coursework beyond the Bachelor's degree (including at least 15 hours at the 800 level or above, in addition to doctoral research credit hours) for students who bypass the master's degree.

b) no more than 12 credit hours of 500 level courses are permitted in a doctoral program. No 500-level course taken in the student's department may appear in the program of study.

c) a minimum of 30 hours of doctoral research credit (ME 999). A student may substitute ME 999 for NE 999 with permission of the supervisory committee.

d) the PhD candidate must satisfy the 75% attendance requirement (o credit hour) in at least four semesters of ME 800 Graduate Seminar/Research Paper. (refer to ME 800 course requirements)

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Nuclear Engineering (PHD)

Admission Requirements

The Ph.D. requires at least three years of full-time study beyond the bachelor's degree, equivalent to at least 90 semester hours, including a dissertation representing at least 30 hours of research credit. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

The Ph.D. is awarded to candidates who have demonstrated unique ability as scholars and researchers as well as proficiency in communication. The degree also certifies that the candidate has displayed familiarity and understanding of the subject matter in the discipline and possesses the ability to make original contributions to knowledge.

Degree Requirements

The Doctoral Program of Study must include:

a) a minimum of 15 hours of graded coursework beyond the Master's degree (all 15 hours MUST be at the 800 level or above, in addition to doctoral research credit hours) for candidates entering the Ph.D. program with a Master's degree.

OR

a minimum of 30 hours of graded coursework beyond the bachelor's degree (including at least 15 hours at the 800 level or above, in addition to doctoral research credit hours) for students who bypass the master's degree.

b) no more than 12 credit hours of 500 level courses are permitted in a doctoral program. No 500-level course taken in the student's department may appear in the program of study.

c) a minimum of 30 hours of doctoral research credit (NE 999). A student may substitute NE 999 for ME 999 with permission of the supervisory committee.

d) the PhD candidate must satisfy the 75% attendance requirement (o credit hour) in at least four semesters of ME 800 Graduate Seminar/Research Paper. (refer to ME 800 course requirements)

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Complex Fluid Flows Graduate Certificate

Contact: Mingjun Wei
E-mail: grad@mne.ksu.edu

The Department of Mechanical and Nuclear Engineering offers a graduate certificate in complex fluid flows for students in other disciplines. The intent of this certificate is to conduct research and train graduate students in the general area of modern fluid dynamics. Given the highly complex and difficult problems encountered in this area, this program strives to blend three important branches of research: fundamental physics, experimental verification, and computational fluid dynamics.

Since more and more employment opportunities at the graduate level require interdisciplinary training, the certificate program in complex fluid flows serves to make our graduate students attractive to future employers in industry and academia. Through the interdisciplinary graduate courses, seminars, and innovative research in complex fluid flows, students receive a much broader exposure to all facets of complex fluid flow research than they could receive within a single department.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

General Requirements:

1. Student must complete their MS or Ph.D. degree requirements in Chemical Engineering, Mechanical Engineering, and Nuclear Engineering, or Physics.
2. Complete three semesters of CFF Seminar: PHYS 708 or CHE 708 (one credit hour). The CFF bi-weekly seminar series has brought distinguished speakers from various national and international organizations to the KSU campus.

New Core

Course Options:

3. Complete at least three (MS students) or five (Ph.D. students) of the courses below:
 - CHE 862 - Advanced Transport Phenomena I **Credits: 3**
 - CHE 867 - Advanced Transport Phenomena II **Credits: 3**
 - CHE 910 - Selected Topics in Transport Phenomena **Credits: 3**
 - ME 720 - Intermediate Fluid Mechanics **Credits: 3**
 - ME 831 - Boundary Layer Theory **Credits: 3**
 - PHYS 651 - Introduction to Optics **Credits: 4**
 - PHYS 652 - Applied Optics and Optical Measurement **Credits: 3**

Non-technical course

4. Complete the following non-technical course (2 credit hours):
 - LEAD 212 - Introduction to Leadership Concepts **Credits: 2-3**

Total Hours Required for Graduate Certificate: 11-18

Master of Science

Mechanical Engineering (MS)

The department offers Master of Science degrees in both **mechanical engineering** and **nuclear engineering**. The programs are designed to prepare students for advanced positions in industry, consulting and government, as well as for further graduate studies toward a doctorate degree.

Course Requirements

The department offers three degree options at the master's level:

Thesis Option Courses

The Program of Study should include a minimum of 30 credit hours, with the following additional requirements:

Required Courses

1. The candidate should earn credit for at least 6 credit hours of Master's Thesis Research (ME 899) culminating in a successfully defended thesis. A student may substitute ME 899 for NE 899 with permission of the supervisory committee.
2. At least 18 hours, of the required minimum of 30 hours, should be at the 700 level and above, including ME 800 Graduate Seminar/Research Paper, and the thesis/research and the report/problems hours required by the thesis and report options.
3. The MS candidate must satisfy the 75% attendance requirement for on-campus students in at least two semesters of ME 800 (0 credit hours). Graduate Seminar/Research Paper. Refer to ME 800 course requirements.
4. Courses at the 600-level may be included in the Program of Study, but 500-level courses in the student's major area are expected to have been completed as undergraduate prerequisites to graduate study or as undergraduate deficiency courses assigned upon admission. The use of 500-level supporting courses in master's programs is therefore restricted as follows:
 - (a) No course in the student's major area may be at the 500 level and
 - (b) normally no more than 6 credit hours may be at the 500 level
5. A minimum of 18 credit hours of graded coursework (i.e., courses in which a letter grade is assigned)
6. The graded coursework should include at least one 3 credit hour course in engineering mathematics or applied mathematical analysis. Courses that may be used to meet this requirement are:
 - MATH 632 - Elementary Partial Differential Equations **Credits: 3**
 - MATH 713 - Advanced Applied Matrix Theory **Credits: 3**
 - MATH 740 - Calculus of Variation **Credits: 3**
 - MATH 745 - Ordinary Differential Equations **Credits: 3**
 - MATH 855 - Methods of Applied Mathematics I **Credits: 3**
 - MATH 856 - Methods of Applied Mathematics II **Credits: 3**
 - MATH 864 - Theory of Ordinary Differential Equations I **Credits: 3**
 - MATH 865 - Theory of Ordinary Differential Equations II **Credits: 3**
 - ME 760 - Engineering Analysis I **Credits: 3**
 - ME 860 - Engineering Analysis II **Credits: 3**
 - PHYS 801 - Mathematical Methods of Physics **Credits: 3**
 - PHYS 802 - Computational Methods in Physics **Credits: 4**

Options for Completing 30 Credit Hour Requirement

In addition to the minimum graded coursework requirement (18 credit hours) and the minimum Master's Thesis Research requirement (6 credit hours), the candidate must complete 6 more credit hours to meet the minimum credit requirement of 30 credit hours. This can be done through any combination of the following:

- Up to 2 additional credit hours of Master's Thesis Research (ME 899 or NE 899)
- Up to 3 credit hours of ME 800 Seminar/Research Paper (refer to ME 800 course requirements)
- Up to 3 credit hours of independent study

- Up to 6 credit hours of additional coursework

Report Option Courses

- The Program of Study should include a minimum of 30 credit hours, including 28 credit hours of graded coursework and 2 credit hours of Master's Report. One credit hour of ME800 Seminar/Research Paper (earned by giving a successful seminar presentation) may be included in the 28 credit hours of required coursework.
- In addition, items (2), (3), (4), and (6) from the MS Thesis requirements above apply directly to the MS Report Option Program of Study.
- The MS Report Option must culminate in a successfully defended report.

Coursework Only Option Courses

- The Program of Study should include a total of 30 credit hours of graded coursework.
- Items (2), (4), and (6) from the MS Thesis requirements above apply directly to the MS Course Work Option Program of Study.

The coursework only option for this program does not require a culminating experience.

Note

Students on self-support can choose whatever option they want. Students supported by research projects or the Department should take the thesis option.

Total Hours Required for Master's: 30

Nuclear Engineering (MS)

The department offers Master of Science degrees in both **mechanical engineering** and **nuclear engineering**. The programs are designed to prepare students for advanced positions in industry, consulting and government, as well as for further graduate studies toward a doctorate degree.

Course Requirements

The department offers three degree options at the master's level.

Thesis Option Courses

The Program of Study should include a minimum of 30 credit hours, with the following additional requirements:

Required Courses

1. The candidate should earn credit for at least 6 credit hours of Master's Thesis Research (NE 899) culminating in a successfully defended thesis. A student may substitute NE 899 for ME 899 with permission of the supervisory committee.
2. At least 18 hours, of the required minimum of 30 hours, should be at the 700 level and above, including ME 800 Graduate Seminar/Research Paper, and the thesis/research and the report/problems hours required by the thesis and report options.

3. The MS candidate must satisfy the 75% attendance requirement for on-campus students in at least two semesters of ME 800 (0 credit hours). Graduate Seminar/Research Paper. Refer to ME 800 course requirements.
4. Courses at the 600-level may be included in the Program of Study, but 500-level courses in the student's major area are expected to have been completed as undergraduate prerequisites to graduate study or as undergraduate deficiency courses assigned upon admission. The use of 500-level supporting courses in master's programs is therefore restricted as follows:
 - a. No course in the student's major area may be at the 500 level.
 - b. Normally, no more than 6 credit hours may be at the 500 level.
5. A minimum of 18 credit hours of graded coursework (i.e., courses in which a letter grade is assigned)
6. The graded coursework should include at least one 3 credit hour course in engineering mathematics or applied mathematical analysis. Courses that may be used to meet this requirement are:
 - MATH 632 - Elementary Partial Differential Equations **Credits: 3**
 - MATH 713 - Advanced Applied Matrix Theory **Credits: 3**
 - MATH 740 - Calculus of Variation **Credits: 3**
 - MATH 745 - Ordinary Differential Equations **Credits: 3**
 - MATH 855 - Methods of Applied Mathematics I **Credits: 3**
 - MATH 856 - Methods of Applied Mathematics II **Credits: 3**
 - MATH 864 - Theory of Ordinary Differential Equations I **Credits: 3**
 - MATH 865 - Theory of Ordinary Differential Equations II **Credits: 3**
 - ME 760 - Engineering Analysis I **Credits: 3**
 - ME 860 - Engineering Analysis II **Credits: 3**
 - PHYS 801 - Mathematical Methods of Physics **Credits: 3**
 - PHYS 802 - Computational Methods in Physics **Credits: 4**
7. A student obtaining the master's degree must take the following core courses:
 - NE 612 - Principles of Radiation Detection **Credits: 3**
 - NE 620 - Problems in Nuclear Engineering **Credits: 1-18**
 - NE 630 - Nuclear Reactor Theory **Credits: 3**
 - NE 690 - Radiation Protection and Shielding **Credits: 3**

Options for Completing the 30-hour Requirement

In addition to the minimum graded coursework requirement (18 credit hours) and the minimum Master's Thesis Research requirement (6 credit hours), the candidate must complete 6 more credit hours to meet the minimum credit requirement of 30 credit hours. This can be done through any combination of the following:

- Up to 2 additional credit hours of Master's Thesis Research (NE 899)
- Up to 3 credit hours of ME 800 Seminar /Research Paper (refer to ME 800 course requirements)
- Up to 3 credit hours of independent study
- Up to 6 credit hours of additional coursework

Bettis Reactor Engineer School (BRES) graduates who enter the master's program may transfer up to 4 courses (12 credits) toward fulfillment of degree requirements. The department maintains a list of course equivalencies. Naval Nuclear Power School graduates may be awarded transfer credits for Introduction to Nuclear Engineering (NE 620). Applicants with an undergraduate degree in NE may have this requirement waived.

Report Option Courses

- The Program of Study should include a minimum of 30 credit hours, including 28 credit hours of graded coursework and 2 credit hours of Master's Report. One credit hour of ME800 Seminar /Research Paper (earned by giving a successful seminar presentation) may be included in the 28 credit hours of required coursework.

- In addition, items (2), (3), (4), and (6) from the MS Thesis requirements above apply directly to the MS Report Option Program of Study.
- The MS Report Option must culminate in a successfully defended report.

Coursework Only Option Courses

- The Program of Study should include a total of 30 credit hours of graded coursework.
- Items (2), (4), and (6) from the MS Thesis requirements above apply directly to the MS Course Work Option Program of Study.

The coursework only option for this program does not require a culminating experience.

Note

Students on self-support can choose whatever option they want. Students supported by research projects or the Department should take the thesis option.

Total Hours Required for Master's: 30

College of Health and Human Sciences

Brad Behnke, Interim Dean

Bronwyn Fees, Associate Dean for Academic and Faculty Affairs

Nicholas Wallace, Interim Associate Dean for Research

Shawna Jordan, Assistant Dean for Student Success

Laci Cornelison, Interim Director, Center on Aging

Gwen Ferdinand-Jacob, Program Director, Physician Assistant Program

119 Justin Hall

785-532-5500

hhs@k-state.edu

<https://www.hhs.k-state.edu/>

In a world focused on things, we focus first on people.

The mission of K-State's College of Health and Human Sciences is to discover, disseminate and apply knowledge to meet basic human needs and improve the human condition. This knowledge advances professions, human services, public policy, business and industry.

Doctor of Philosophy

Health and Human Sciences (PHD)

The College of Health and Human Sciences offers a Doctor of Philosophy degree in Health and Human Sciences with specializations in:

- Couple and Family Therapy
- Hospitality Administration
- Kinesiology

- Prevention Science in HDFS
- Sustainable Fashion Business

A Doctor of Philosophy degree in Food, Nutrition, Dietetics and Health and a Doctor of Philosophy in Personal Financial Planning are also offered within the College of Health and Human Sciences.

School of Consumer Sciences

Hospitality Management

Cece X. Y. Leung Program Chair

103 Justin Hall
785-532-6993

hospitality@k-state.edu
<https://www.hhs.k-state.edu/hm/>

Program description

The Department of Hospitality Management offers a master of science degree in hospitality administration and participates in the College of Health and Human Sciences doctor of philosophy program with a specialization in hospitality administration. Graduates are prepared for management and academic careers in hospitality management.

A diverse faculty will teach you how to apply business disciplines, such as human resource management, finance/accounting, strategy, marketing and revenue management-directly to the hospitality industry. Graduate students join the program with diverse academic and work experience backgrounds, such as food service management, hospitality and tourism, hotel and restaurant management, and social sciences.

Graduate faculty and students collaborate to conduct applied research and disseminate findings through scholarly publications and presentations. Flexibility in planning the program of study allows students to meet personal and professional objectives while enhancing knowledge of the discipline. Supportive faculty and peer relationships foster an environment where students may gain the knowledge, skills, and confidence needed for leadership positions in their chosen field.

Graduate assistantships

The department offers graduate teaching and research assistantships.

Students are selected based on academic standing and prerequisite skills required for the assignment. Students on assistantship must take at least 6 credit hours and no more than 12 credit hours per semester and must maintain a 3.0 GPA on all undergraduate and graduate course work. Reappointment is based on maintaining a 3.0 or higher GPA and performance in the position during the previous semester. Students on four-tenths or higher assistantship are assessed fees at the in-state rate in accordance with Graduate School policy.

Fashion Studies

Kim Hiller, Program Chair

225 Justin Hall
1324 Lovers Lane
785-532-6993
Fax: 785-532-3796
idfsgradinfo@ksu.edu
www.hhs.k-state.edu/idfs

Objectives

Graduate education in Fashion Studies provides opportunities to advance knowledge in fashion and retailing with an emphasis on environmental, social, and economic sustainability.

Facilities and Equipment

Product Development Laboratories

The apparel product development laboratory includes industrial sewing, pressing, and patternmaking equipment, ergonomic furnishings, and high-tech teaching technologies. Industry standard software and hardware, such as OptiTex and Adobe Suite, are used for product development, patternmaking, and technical specifications.

A GTCO Calcomp RD3 pattern digitizer, wide format plotters, Structure Sensor, Vicon Bonita 10 motion capture system, and Novel pliance X are available for research related to anthropometrics, clothing sizing, and patternmaking. A variety of software, including AnthroScan and Geomagic are used to manipulate scanned data. Plus, a set of Tobii Eye-tracking Glasses Pro 2 and Tobii Data Analyzer software are available for behavioral research.

The natural dye laboratory is equipped for dyeing, printing, and steaming textiles for research and creative inquiry projects. Equipment includes a bullet steamer, and a colorimeter, which is available for colorfastness tests.

Historic Costume and Textile Museum

The Historic Costume and Textile Museum is a notable collection of traditional and artistic artifacts, available for scholarly research. With over 15,000 holdings, the collection includes several Nelly Don dresses, wearable art from Anita Luvera Mayer, American quilts, haute couture, salon shoes, military uniforms, Byzantine-era textiles, Chinese and other ethnic textiles, and clothing and textiles from famous and not-so-famous mid westerners. Beginning in the early 20th century, the collection's holdings are still augmented by friends, faculty, and Kansas State University alumni who have lived and traveled throughout the world.

Admission and application

Application procedures

Applicants follow the Application Process of the Kansas State University Graduate School available at <http://www.k-state.edu/grad/admissions/application-process/>. The Kansas State University Graduate School requires that all application packages be fully complete before review by the graduate faculty in the department.

Applications are reviewed after they are complete in the online application system and the application fee has been paid. Fashion Studies graduate faculty review applications and decide whether to recommend admission at monthly graduate program meetings. It is advised that applicants contact graduate faculty members prior to applying to ensure there is a match between the applicants' research interests and faculty expertise. Once admission is recommended by the program graduate faculty, the Graduate School conducts a final review. In the event the faculty decide against admission, the applicant is notified by letter sent via email.

Assistantships

Financial aid is available through a limited number of teaching and research assistantships. Graduate students selected for an assistantship receive a monthly stipend and may be eligible for a tuition reduction or waiver. Assistantship applications are due January 8 with a decision announced by March 15.

Personal Financial Planning

Personal Financial Planning Program Chair

343 Justin Hall
(785) 532-6993
pfp@ksu.edu
<https://www.hhs.k-state.edu/pfp/>

Overview

The department of Personal Financial Planning at Kansas State University strives to be globally recognized for its research, education, service, and outreach in financial planning offering emphases in financial counseling and financial therapy. We exist to prepare professionals to transform lives through financial planning.

Accelerated

Accelerated Fashion Studies - Fashion Business (BS)/Fashion Studies (MS)

The accelerated Accelerated Fashion Studies - Fashion Business (BS)/Fashion Studies (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Fashion Studies degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Admission application is completed online and accessed via the following link found on the graduate school website: <https://www.applyweb.com/kstate/>. Once an account is created, the degree program you seek is chosen, follow the instructions to manage the application process. The graduate school website includes step-by-step instructions (<https://www.k-state.edu/grad/admissions/application-process/>).

Application for admission should include the following information:

- A personal statement of objectives providing a summary of academic and/or professional experience, identification specific areas of interest, professional goals, and preferred primary faculty advisor.
- Current resume
- Three letters of recommendation, one of which must be from a current faculty member in Fashion Studies.
- Official transcripts for all college coursework.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- All B.S. undergraduate degree requirements must be completed before M.S. degree will be awarded.
- The student must complete 30 hours of graduate coursework and maintain a graduate GPA of at least 3.0.
- Students will complete either a research project or a work practicum as the required culminating experience.
- At least 18 hours of the graduate program of study must be at the 700 level or above.
- Once admitted to the accelerated degree program, the student is expected to refer to departmental and university graduate handbooks for policies and procedures for graduate degrees.
- The B.S. degree will be awarded following the completion of the undergraduate degree requirements.
- In the event that a student begins this program but does not wish to finish the M.S. in Fashion Studies degree requirements, the student must notify the Dean's Office immediately. A notation on the student's transcript will indicate courses taken at the graduate level were applied to the bachelor's degree.

Course Requirements

Fashion Studies (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FASH 600 - Soft Goods Supply Chain Management **Credits: 3**
- IDFS 650 - Resilient Systems for a Sustainable World **Credits: 3**
- IDFS 670 - Problem Solving for a Sustainable World **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Fashion Studies - Fashion Design (BS)/Fashion Studies (MS)

The accelerated Accelerated Fashion Studies - Fashion Design (BS)/Fashion Studies (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Fashion Studies degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Admission application is completed online and accessed via the following link found on the graduate school website: <https://www.applyweb.com/kstateg/>. Once an account is created, the degree program you seek is chosen, follow the instructions to manage the application process. The graduate school website includes step-by-step instructions (<https://www.k-state.edu/grad/admissions/application-process/>).

Application for admission should include the following information:

- A personal statement of objectives providing a summary of academic and/or professional experience, identification specific areas of interest, professional goals, and preferred primary faculty advisor.
- Current resume
- Three letters of recommendation, one of which must be from a current faculty member in Fashion Studies.
- Official transcripts for all college coursework.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- All B.S. undergraduate degree requirements must be completed before M.S. degree will be awarded.
- The student must complete 30 hours of graduate coursework and maintain a graduate GPA of at least 3.0.
- Students will complete either a research project or a work practicum as the required culminating experience.
- At least 18 hours of the graduate program of study must be at the 700 level or above.
- Once admitted to the accelerated degree program, the student is expected to refer to departmental and university graduate handbooks for policies and procedures for graduate degrees.
- The B.S. degree will be awarded following the completion of the undergraduate degree requirements.
- In the event that a student begins this program but does not wish to finish the M.S. in Fashion Studies degree requirements, the student must notify the Dean's Office immediately. A notation on the student's transcript will indicate courses taken at the graduate level were applied to the bachelor's degree.

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FASH 600 - Soft Goods Supply Chain Management **Credits: 3**
- IDFS 650 - Resilient Systems for a Sustainable World **Credits: 3**
- IDFS 670 - Problem Solving for a Sustainable World **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Finance (BSBA)/Personal Financial Planning (MS)

The accelerated Accelerated Finance (BSBA)/Personal Financial Planning (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Personal Financial Planning degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- PFP 764 - Estate Planning for Families **Credits: 3**
- PFP 770 - Applied Behavioral Finance **Credits: 3**
- PFP 782 - Investing for the Family's Future II **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Hospitality Management (BS)/Hospitality Administration (MS)

The accelerated Accelerated Hospitality Management (BS)/Hospitality Administration (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Hospitality Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

Application for admission will be completed online and can be accessed via the following link found on the graduate school website: <http://www.applyweb.com/kstateg/> . Once you create an account, you will be able to choose the degree program you seek and manage the application process. The graduate school website includes step-by-step instructions (<http://www.k-state.edu/grad/admissions/application-process/>).

Application for admission should include the following information:

- Statement of objectives designating desired area of specialization, summarizing academic and/or professional experience, and identifying professional goals.
- Current resume.
- Two letters of recommendation.
 - Follow the steps as you complete the online application. Enter the contact information of each reference online, and the system will request the letters of recommendation. Recommenders will upload their letters directly to your application using the links provided.
 - For the accelerated B.S./M.S. application, one letter of recommendation must be from a faculty member in hospitality management.
- Official transcripts for all college coursework.
 - You must upload an electronic copy (PDF preferred) of transcript(s) from each college or university where you have taken any higher education courses. You may also have previous institutions send official transcripts to the Department of Hospitality Management . Transcripts become part of your records at K-State and cannot be returned.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

- The student must complete 30 (thesis) or 36 (coursework) graduate credit hours with a graduate GPA of at least 3.0.
- Students with the course-only, non-thesis option may also choose graduate certificate programs offered at Kansas State University to develop a specialty area.
- The student must complete all B.S. undergraduate degree requirements.
- At least 18 hours of the program of study should be at the 700 or above level.
- Once an individual is admitted to the accelerated degree program, the student should consult the departmental and university graduate handbooks for policies and procedures for graduate degrees, including: supervisory committee, final examination, thesis defense, etc. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements.
- The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Course Requirements

Hospitality Administration (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- HM 621 - Hospitality Law **Credits: 3**
- HM 650 - Senior Seminar in Hospitality Management **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.

- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Personal Financial Planning (BS)/Master of Business Administration (MBA)

The accelerated Accelerated Personal Financial Planning (BS)/Master of Business Administration (MBA) will provide high-performing undergraduates the opportunity to pursue an accelerated Master of Business Administration degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Course Requirements

Master of Business Administration (MBA)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FINAN 623 - Financial Modeling **Credits: 3**
- FINAN 653 - Security and Portfolio Analysis **Credits: 3**
- FINAN 654 - Derivative Securities and Markets **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.

- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Personal Financial Planning (BS)/Personal Financial Planning (MS)

The accelerated Accelerated Personal Financial Planning (BS)/Personal Financial Planning (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Personal Financial Planning degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Personal Financial Planning (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- PFP 768 - Introduction to Financial Therapy **Credits: 3**
- PFP 769 - Money and Relationships **Credits: 3**
- PFP 770 - Applied Behavioral Finance **Credits: 3**
- PFP 771 - Financial Therapy Theory & Research **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Health and Human Sciences - Hospitality Administration (PHD)

Health and Human Sciences with specialization in Hospitality Administration

Admission Requirements

The Ph.D. in Health and Human Sciences with specialization in Hospitality Administration is offered through the Hospitality Management graduate program. A master's degree from an accredited institution is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate. Regular admission requires a grade point average of 3.5 on a 4.0 scale in a master's degree program.

Completion of the following prerequisite coursework is required for regular admission:

- accounting or finance
- management concepts
- marketing
- food service management, event, and/or lodging management

If these prerequisites are not met, the student may be admitted provisionally with the expectation that these deficiencies will be removed within the first two semesters at K-State.

One year of full-time (or 2,000 hours, if not full-time) experience in some aspect of the hospitality industry is required. Management experience is preferred.

Required application materials include:

- Official transcript of all completed academic work
- Recommendation letter: Applicants will be able to designate three individuals for letters of recommendation online. Enter the contact information of each reference online, and the system will request the letters of recommendation. Recommenders will upload their letters directly to your application using the links provided.
- A resume or CV
- Academic Statement of Purpose
- GRE or GMAT scores: All applicants are required to take the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT).
- Affidavit of Financial Support (International student only): This documentation is required in order to issue an I-20 OR DS-2019 and has no bearing on the admission decision
- TOEFL scores (if required per country of admission by the Graduate School): English proficiency test scores are required if English is not your native language (your country of birth).

Test	Minimum Score
IBT TOEFL	79
IELTS Academic Test	6.5
Pearson Test of English (PTE)	58

The Kansas State University Graduate School and Department of Hospitality Management accepts MyBest™ Score for each section of the TOEFL test. An international applicant who has received a degree in the last two years from an accredited college or university in the United States is exempt from this requirement. More information regarding English Proficiency Requirements can be found online: <http://www.k-state.edu/grad/admissions/application-process/international/>

Students desiring to apply for the Ph.D. program submit the above materials online using the link: <https://www.k-state.edu/admissions/apply/graduate/>

Course Requirements

The Ph.D. requires at least 90 semester credit hours beyond the bachelor's degree, including 15 credit hours of dissertation research. The number of hours from a previously completed master's degree which may be counted toward the 90-hour requirement is decided by the student's supervisory committee and the Graduate School. A maximum of 30 hours may be transferred from a completed master's degree. A maximum of nine credit hours can be transferred from graduate work completed after the master's degree at another accredited university. Doctoral students are required to pass both written and oral preliminary examinations prior to admission to candidacy.

Doctor of Philosophy Course Requirements

Hospitality Administration (20 Credit Hours)

- HM 805 - Advanced Foodservice Management **Credits: 3**
OR
- HM 815 - Advanced Lodging Management **Credits: 3**
OR
- HM 825 - Advanced Meetings and Business Event Management **Credits: 3**

- HM 905 - Advanced Hospitality Strategic Management **Credits: 3**
- HM 885 - Seminar in Hospitality Administration **Credits: 1**

- MANGT 720 - Managing Organizational Behavior **Credits: 3**
OR
- HM 890 - Administration of Hospitality Organizations **Credits: 3**

- HM 895 - Financial Management and Cost Controls for the Hospitality Industry **Credits: 3**
- HM 980 - Higher Education in Hospitality Management **Credits: 3**
- HM 990 - Dissertation Proposal Seminar **Credits: 1**
- HM 995 - Grantsmanship and Publication **Credits: 3**

Teaching (6 Credit Hours)

- HM 993 - Teaching Practicum in Hospitality Management **Credits: 3**
- EDCI 943 - Principles of College Teaching **Credits: 3**

Research and Methodology (33 Credit Hours)

Dissertation Research (15 Credit Hours)

- HM 999 - Research in Hospitality Administration **Credits: 1-18**

Research Methods (9 Credit Hours)

- HM 975 - Research and Applied Theories in Hospitality Management **Credits: 3**
- HDFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**
OR
- SOCIO 824 - Qualitative Methodology **Credits: 3**
OR
- EDLEA 838 - Qualitative Research in Education **Credits: 3**

Three additional credit hours from below:

- MIS 665 - Business Analytics and Data Mining **Credits: 3**
- MIS 670 - Social Media Analytics and Web Mining **Credits: 3**
- MKTG 880 - Applied Marketing Analytics **Credits: 3**
- HDFS 888 - Research Methods in Human Development and Family Science **Credits: 3**

Statistics (9 Credit Hours from below)

- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**

- STAT 705 - Regression and Analysis of Variance **Credits: 3**
OR
- STAT 713 - Applied Linear Statistical Models **Credits: 3**

- STAT 720 - Design of Experiments **Credits: 3**
OR
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**

- HDFS 806 - Statistical Methods in Human Development and Family Science I **Credits: 3**
- HDFS 906 - Statistical Methods in Family Studies and Human Sciences II **Credits: 3**
- EDCEP 817 - Statistical Methods in Education **Credits: 3**

Other Elective Graduate Courses (31 Credit Hours)

Courses must be approved by the student's supervisory committee. Nine hours must be from HM.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Health and Human Sciences - Sustainable Fashion Business (PHD)

The Fashion Studies program participates in the Ph.D. degree program awarded from the College of Health and Human Sciences with a specialization in Sustainable Fashion Business. The degree is designed to enable students to combine knowledge of fashion with an understanding of its application to a broader human perspective. A program of study will be individually planned to capitalize on the interests, goals, and disciplinary backgrounds of the student and faculty. A preliminary written examination and oral defense are required upon completing two-thirds of the program of study. A dissertation and oral defense of the dissertation are required.

Admission Requirements

The PhD requires a minimum of 90 semester credit hours beyond the bachelor's degree – including 60 hours of course work and 30 hours of dissertation research.

A master's degree is a requirement for admission and represents 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Course Requirements (17 Credit Hours)

- EDCI 943 - Principles of College Teaching **Credits: 3**
- FASH 600 - Soft Goods Supply Chain Management **Credits: 3**
- FASH 680 - Sustainable Fashion and Color **Credits: 3**
- FASH 700 - Foundations of Sustainability **Credits: 3**
- FASH 825 - Strategic Planning for Sustainability **Credits: 3**
- FASH 990 - Dissertation Proposal Seminar **Credits: 1**

Research and Statistics (39-42 Credit Hours)

Research Methods

Select one 3 credit hour graduate level research methods course from the options below:

- EDCEP 816 - Research Methods in Education **Credits: 3**
- HDFFS 888 - Research Methods in Human Development and Family Science **Credits: 3**
- SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**

Special note: students conducting qualitative dissertation research will enroll in a minimum of 3 credit hours of qualitative methods. These hours are in addition to the required 3 hours of basic research methods. Course options include:

- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- HDFFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**
- SOCIO 824 - Qualitative Methodology **Credits: 3**

Statistics

Select a minimum of two courses (6 credit hours) of graduate level statistics. Doctoral students may substitute up to 3 credit hours of statistics from a completed master's degree. Course options include:

Educational Counseling

- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 819 - Survey Research **Credits: 3**

- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
Applied Human Sciences
- HDFS 806 - Statistical Methods in Human Development and Family Science I **Credits: 3**
- HDFS 906 - Statistical Methods in Family Studies and Human Sciences II **Credits: 3**
Psychology
- PSYCH 802 - Psychological Research Design and Analysis I **Credits: 3**
- PSYCH 805 - Psychological Research Design and Analysis II **Credits: 3**
Sociology
- SOCIO 825 - Quantitative Methods **Credits: 3**
- SOCIO 925 - Specialized Approaches to Sociological Research **Credits: 3**
Statistics
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

Dissertation Research

Complete a total of 30 credit hours of dissertation research.

- FASH 999 - Dissertation Research in Fashion Studies **Credits: 1-12**

Other Elective Graduate Courses (2-8 Credit Hours)

Select courses to fulfill remaining credit hours based upon developing an area of expertise in the field. These courses must be approved by the student's supervisory committee.

Substitute Course Policy for Research Methods and Statistics

Ph.D. students in Fashion Studies may not substitute a research methods course taken as part of a master's degree. Ph.D. students may substitute up to 3 credit hours of statistics from the master's degree.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Personal Financial Planning (PHD)

The Personal Financial Planning doctoral program is housed within the College of Health and Human Sciences. The program is designed to provide talented and ambitious students with knowledge, skills, and tools necessary to achieve success as college and university faculty, practitioners of financial planning, and productive citizens of the State of Kansas and the United States. A dedicated commitment to enhancing students' personal development will prepare students to excel academically and professionally, leading ultimately to more rewarding and creative lives.

If students have not taken a graduate-level statistics course in the recent past they may be required to take STAT 703 or another introductory research and statistics course prior to their first session on campus.

Admission Requirements

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Required Courses: 60 credit hours

Grades of B or better are required for PFP 805, PFP 806, HHS 888, PFP 889, PFP 890.

- HHS 888 - Foundations in Research Methodology **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**
- PFP 771 - Financial Therapy Theory & Research **Credits: 3**
- PFP 805 - Statistical Software Applications in Personal Financial Planning **Credits: 3**
- PFP 806 - Statistical Methods in Personal Financial Planning I **Credits: 3**
- PFP 808 - Research Application in Personal Financial Planning **Credits: 3**
- PFP 825 - Survey of Personal Financial Planning Research and Theory **Credits: 3**
- PFP 889 - Theories and Models in Personal Financial Planning **Credits: 3**
- PFP 890 - Research Methods in Personal Financial Planning II **Credits: 3**
- PFP 894 - Professional Issues in Personal Financial Planning **Credits: 1**
- PFP 900 - Research Seminar **Credits: 1-2**
- PFP 956 - Clinical Research and Applications in Financial Counseling and Planning **Credits: 3**
- PFP 990 - Dissertation Proposal Seminar **Credits: 1**
- PFP 999 - Dissertation Research **Credits: 1-21**

Supporting Courses: 18 credit hours

- PFP 760 - Retirement Planning for Families **Credits: 3**
- PFP 762 - Investing for the Family's Future I **Credits: 3**
- PFP 764 - Estate Planning for Families **Credits: 3**
- PFP 766 - Insurance Planning for Families **Credits: 3**
- PFP 772 - Personal Income Taxation **Credits: 3**
- PFP 836 - Financial Planning Case Studies **Credits: 3**

Elective Courses: minimum 12 credit hours

- PFP 768 - Introduction to Financial Therapy **Credits: 3**
- PFP 769 - Money and Relationships **Credits: 3**
- PFP 770 - Applied Behavioral Finance **Credits: 3**
- PFP 835 - Professional Practice Management in Personal Financial Planning **Credits: 3**
- PFP 860 - Advanced Retirement Planning Issues **Credits: 3**
- PFP 863 - Advanced Personal Income Tax Planning **Credits: 3**
- PFP 864 - Advanced Estate Planning Issues **Credits: 3**
- PFP 909 - Topics in Personal Financial Planning **Credits: 0-3**
- Or other elective as agreed upon by the student's committee

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Hours Required for Doctorate: 90

Dual Degree

Dual Degree: Master of Business Administration and MS in Hospitality Administration

The Dual MBA/MS in Hospitality Administration Degree Program is an academic program that leads to both the MBA degree and the MS degree in Hospitality Administration. The program is designed for students seeking business leadership opportunities in the hospitality industry. The MBA portion is designed to advance the knowledge and practice of business administration. The Hospitality Administration portion is designed to provide industry specific knowledge necessary to succeed in the hospitality industry. Students graduating from the dual degree program will receive two degrees, an MBA and an MS in Hospitality Administration. The program requires the completion of 55 credit hours: 30 credit hours at the MBA program and 25 credit hours at the MS in Hospitality Administration program. The degrees are conferred simultaneously when all requirements for the dual degree program have been met. The assessment of the dual degree program is conducted in each program independently as specified in respective programs.

Application / Admission

Students are required to fulfill the admittance requirements of both degrees to be admitted into this dual degree program. The person seeking admission to the MBA/MS in Hospitality Administration Dual Degree Program must:

1. Complete an application on CollegeNet (<https://www.applyweb.com/kstateg>) using Dual MBA/MS in Hospitality Administration program link. Students desiring to apply only to the MBA or MS in Hospitality Administration should select the specific program NOT the dual degree option in CollegeNet. The link will be assessable from both College of Business and Department of Hospitality Management portals. Application materials include: official transcript of all completed academic work; GMAT scores and TOEFL scores (international students only), if applicable; statement of objectives; resume; and an Affidavit of Financial Support, if applicable. GMAT waiver considered for an applicant who demonstrates a high level of academic performance, analytical skill, and ability for academic success.
2. The graduate admission committee of each program will evaluate the MBA/MS application separately, and only those who are accepted by both programs will be admitted to the Dual MBA/MS program.
3. A student who is initially admitted to either the MBA or MS in Hospitality Administration degree and who later decides to pursue the dual degree must apply for change of degree to the MBA/MS dual degree prior to being awarded the first degree.
4. Students admitted to the MBA/MS joint degree program who later decide they only want to complete one of the degrees must:
 - a. Submit a written notification to both programs.
 - b. Must have their primary program plan changed to reflect the degree to be completed.
 - c. Submit a new program of study for the degree program they will complete to the graduate school for an approval. Students must complete the requirements for the respective program to receive the MBA or MS degree.

Degree Requirements

Prerequisites

Curriculum prerequisite courses (MBA)

- Six hours of economics
- MATH 205 General Calculus and Linear Algebra or evidence of equivalent preparation
- An undergraduate statistics course or equivalent preparation (STAT 703 must be taken in the first year of the program)

Curriculum prerequisite courses (MSHA)

- accounting or finance
- management concepts
- marketing
- foodservice management, event, and/or lodging management

Business Requirement (30 credit hours total)

May waive 6-12 credit hours if "B" or better is achieved in equivalent courses at the discretion of the program director. Typically waivers are only granted for multiple undergraduate courses taken, and only credits from AACSB accredited institutions are accepted.

- ACCTG 710 - Foundations of Accounting **Credits: 3**
 - ECON 815 - Economic Analysis for Business **Credits: 3**
 - MANGT 710 - Operations and Supply Chain Management **Credits: 3**
 - MANGT 720 - Managing Organizational Behavior **Credits: 3**
 - MIS 830 - Business Intelligence and Storytelling in Cloud Environments **Credits: 3**
 - MKTG 705 - Marketing Concepts and Research **Credits: 3**
 - ACCTG 860 - Management Accounting and Business Problem Solving **Credits: 3**
 - MANGT 860 - Managing the Triple Bottom Line Business **Credits: 3**
 - MANGT 880 - Strategic Management **Credits: 3**
- Elective: 3 credit hours, must be an approved graduate elective, such as the following:
- MIS 665 - Business Analytics and Data Mining **Credits: 3**
 - MIS 670 - Social Media Analytics and Web Mining **Credits: 3**
 - MANGT 840 - Advanced Entrepreneurship **Credits: 3**
 - MKTG 844 - Advanced International Marketing **Credits: 3**
 - MKTG 880 - Applied Marketing Analytics **Credits: 3**

Hospitality Administration Requirement (25 hours total)

Required Core (13 credit hours):

- HM 805 - Advanced Foodservice Management **Credits: 3**
Or
 - HM 815 - Advanced Lodging Management **Credits: 3**
Or
 - HM 825 - Advanced Meetings and Business Event Management **Credits: 3**
-
- HM 835 - Survey of Research in Hospitality Management **Credits: 3**
 - HM 885 - Seminar in Hospitality Administration **Credits: 1**

- HM 895 - Financial Management and Cost Controls for the Hospitality Industry **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**

Additional Courses if Completing the Thesis Option (12 hours)

- HM 899 - Research in Hospitality Administration **Credits: 1-18**
- HM 810 - Research Techniques in Hospitality Management **Credits: 3**
- HM elective

Credits / Units: 3

Additional Courses if Completing the Non-Thesis Option (12 hours)

- HM 785 - Practicum in Hospitality Management **Credits: 1-6**
- Additional Graduate Elective

Credits / Units: 9

Six hours must be from HM. Courses must be approved by the student's supervisory committee.

Graduate Certificate

Advanced Financial Planning Graduate Certificate

The Advanced Financial Planning graduate certificate is offered through the Department of Personal Financial Planning. The program is designed to provide practitioners with the CERTIFIED FINANCIAL PLANNER™ certification more advanced financial planning knowledge and technical skills.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Personal Financial Planning at Kansas State University.

Course Requirements

Required Courses

- PFP 835 - Professional Practice Management in Personal Financial Planning **Credits: 3**
- PFP 860 - Advanced Retirement Planning Issues **Credits: 3**
- PFP 863 - Advanced Personal Income Tax Planning **Credits: 3**
- PFP 864 - Advanced Estate Planning Issues **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Financial Therapy Graduate Certificate

Contact: Morgan Graham

E-mail: morgangraham@ksu.edu

The Financial Therapy graduate certificate is offered through the department of Personal Financial Planning. The program is completely online, combining self-study with a mentoring classroom-type experience. Students will develop skills to help clients

improve financial well-being from a holistic perspective where psychological, emotional, relational, and economic aspects of financial health are considered and addressed.

Students without prior personal financial planning coursework or professional experience in financial planning will be required to have completed a Fundamentals in Personal Finance equivalent course that covers basic financial planning concepts. The course can be an undergraduate or graduate course and must have been taken at an accredited university.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Personal Financial Planning at Kansas State University.

Course Requirements

Required Courses

- PFP 768 - Introduction to Financial Therapy **Credits: 3**
- PFP 769 - Money and Relationships **Credits: 3**
- PFP 770 - Applied Behavioral Finance **Credits: 3**
- PFP 771 - Financial Therapy Theory & Research **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Personal Financial Planning Graduate Certificate

Kansas State University's personal financial planning certificate program is a CFP Board-Registered Program. Accurate and timely information in the key area of financial planning will be provided, in addition to meeting the educational requirements to be eligible for the CERTIFIED FINANCIAL PLANNER™ exam.

K-State's certificate in personal financial planning is unlike any other program in the country. The majority of programs registered with CFP Board require in-class attendance or rely on self-study materials. The K-State program offers students an opportunity to combine self-study with a mentoring classroom-type experience. The program is offered fully online or on campus.

The certificate in personal financial planning requires 18 hours of graduate credit. The program consists of six courses. Students have the option of taking these six courses as a stand-alone graduate certificate. All students must be accepted to the K-State Graduate School.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Personal Financial Planning at Kansas State University.

Course Requirements

Required Courses

The Certificate in Personal Financial Planning will consist of 18 credit hours of the following courses:

- PFP 760 - Retirement Planning for Families **Credits: 3**
- PFP 762 - Investing for the Family's Future I **Credits: 3**
- PFP 764 - Estate Planning for Families **Credits: 3**
- PFP 766 - Insurance Planning for Families **Credits: 3**

- PFP 772 - Personal Income Taxation **Credits: 3**
- PFP 836 - Financial Planning Case Studies **Credits: 3**

Total Hours Required for Graduate Certificate: 18

Master of Science

Fashion Studies (MS)

The Fashion Studies program offers a Master of Science degree in Sustainable Fashion Business. This degree is predominantly an on-campus program with opportunity for some online courses. Students are required to complete 24 credit hours of coursework and 6 credit hours of thesis research (30 credit hours total). The sustainable fashion business emphasis is an individualized program of study, capitalizing on the interests and disciplinary background of students and faculty to build the theoretical and methodological skills necessary to solve human ecological problems involving fashion systems.

Graduates are prepared for professional careers within industry, for college instructor positions, and for pursuing a Doctor of Philosophy degree.

Course Requirements

Required Courses

- FASH 600 - Soft Goods Supply Chain Management **Credits: 3**
- FASH 680 - Sustainable Fashion and Color **Credits: 3**
- FASH 700 - Foundations of Sustainability **Credits: 3**
- FASH 825 - Strategic Planning for Sustainability **Credits: 3**
- Select ONE research methods course from the following list:
 - EDCEP 816 - Research Methods in Education **Credits: 3**
 - FASH 850 - Research Methods in Fashion Studies **Credits: 3**
 - HDFS 888 - Research Methods in Human Development and Family Science **Credits: 3**
 - SOCIO 823 - Intermediate Methods of Social Research **Credits: 3**
- Select ONE analytical methods course from the following list:
 - EDCEP 819 - Survey Research **Credits: 3**
 - EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
 - EDLEA 838 - Qualitative Research in Education **Credits: 3**
 - HDFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**
 - HDFS 906 - Statistical Methods in Family Studies and Human Sciences II **Credits: 3**
 - PSYCH 805 - Psychological Research Design and Analysis II **Credits: 3**
 - SOCIO 824 - Qualitative Methodology **Credits: 3**
 - SOCIO 825 - Quantitative Methods **Credits: 3**
 - SOCIO 925 - Specialized Approaches to Sociological Research **Credits: 3**
 - STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
 - STAT 705 - Regression and Analysis of Variance **Credits: 3**

Elective Courses

Select elective courses (5 credit hours) in consultation with advisor.

Thesis Option Courses

Complete 6 credits hours of thesis research:

- FASH 899 - Master's Thesis Research Credits: 1-6

Total Hours Required for Master's: 30

Hospitality Administration (MS)

Whether you want to manage a resort in the mountains, open a restaurant in your hometown or organize events in the city, the online hospitality administration master's program can help prepare you for success. Coursework is designed for a variety of careers in hospitality industry management, which the Bureau of Labor Statistics projects will grow at a higher rate than the national average for all occupation and management occupation jobs.

Admission Requirements

The Hospitality Administration M.S. is offered through the Hospitality Management graduate program. Admission to the program requires a bachelor's degree from an accredited institution. Regular admission requires a grade point average of 3.0 on a 4.0 scale. Completion of the following prerequisite coursework is required for regular admission:

- accounting or finance
- management concepts
- marketing
- foodservice management, event, and/or lodging management

If these prerequisites are not met, the student may be admitted provisionally with the expectation that these deficiencies will be removed within the first two semesters at K-State.

Industry experience in some aspect of hospitality management is preferred. If the student has no industry-related work experience, 1000 hours of such experience must be completed during the degree program.

Application materials required include:

- official transcript of all completed academic work;
- Recommendation letter: Applicants will be able to designate three individuals for letters of recommendation online. Enter the contact information of each reference online, and the system will request the letters of recommendation. Recommenders will upload their letters directly to your application using the links provided.
- A resume of curriculum vitae;
- Statement of purpose;
- Affidavit of financial support (international students only). This documentation is a requirement to issue the I-20 or DS-2019 and has no bearing on the admission decision.
- TOEFL scores (if required per country of admission by the Graduate School): English proficiency test scores are required if English is not your native language (your country of birth).

Test	Minimum Score
IBT TOEFL	79

IELTS Academic Test	6.5
Pearson Test of English (PTE)	58

The Kansas State University Graduate School and Department of Hospitality Management accepts MyBest™ Score for each section of the TOEFL test. An international applicant who has received a degree in the last two years from an accredited college or university in the United States is exempt from this requirement. More information about English Proficiency Requirements can be found online: <http://www.k-state.edu/grad/admissions/application-process/international/>

Application materials are reviewed by graduate faculty and recommendations forwarded to the Graduate School.

Course Requirements

Individual programs of study for the Master of Science degree are planned according to the background and interests of students. Students may choose one of the following plans, with a certificate option, if desired:

30 hours of graduate credit consisting of 24 hours of graduate course work and 6 hours of research for a thesis, or 36 hours of graduate course work and a written comprehensive examination and oral defense.

Students with the course-only, non-thesis option may also choose graduate certificate programs offered at Kansas State University to develop a specialty area.

The coursework only option for this program does not require a culminating experience.

Required Courses

19 credit hours

- HM 805 - Advanced Foodservice Management **Credits: 3**
OR
- HM 815 - Advanced Lodging Management **Credits: 3**
OR
- HM 825 - Advanced Meetings and Business Event Management **Credits: 3**
- HM 835 - Survey of Research in Hospitality Management **Credits: 3**
- MANGT 880 - Strategic Management **Credits: 3**
OR
- HM 905 - Advanced Hospitality Strategic Management **Credits: 3**
- HM 885 - Seminar in Hospitality Administration **Credits: 1**
- MANGT 720 - Managing Organizational Behavior **Credits: 3**
- HM 895 - Financial Management and Cost Controls for the Hospitality Industry **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
OR
- HDFS 806 - Statistical Methods in Human Development and Family Science I **Credits: 3**

Thesis Option Courses

11 credit hours

- HM 899 - Research in Hospitality Administration **Credits: 1-18 (6 credits)**
- Graduate Elective Courses (5 Credits)

Courses must be approved by the student's supervisory committee.

Report Option Courses

17 credit hours

Courses must be approved by the student's supervisory committee. Six hours must be from HM.

Total Hours Required for Master's: 30-36

Personal Financial Planning (MS)

Many select the Personal Financial Planning Track to complete the coursework needed to sit for the CERTIFIED FINANCIAL PLANNER™ exam; the Financial Therapy track which provides client centered financial planning skills; or the Advanced Planning track to develop more advanced financial planning skills.

For additional information, please visit the Personal Financial Planning website at: <https://www.hhs.k-state.edu/pfp/>.

Course Requirements

To complete the Master of Science degree the student must complete 30 semester credit hours as per one of the following plans:

- A) Personal Financial Planning (18) + Financial Therapy (12)
- B) Personal Financial Planning (18) + Advanced Financial Planning (12)
- C) Financial Therapy (12) + Advanced Financial Planning (12) + Electives (6)
- D) Personal Financial Planning (18) + Electives (12)

Students entering the program without CFP® certification or a Time Value of Money course will be required to take PFP 624 Fundamentals of Family Financial Planning or an equivalent course as a prerequisite.

The coursework only option for this program does not require a culminating experience.

Personal Financial Planning (18 credit hours)

- PFP 760 - Retirement Planning for Families **Credits: 3**
- PFP 762 - Investing for the Family's Future I **Credits: 3**
- PFP 764 - Estate Planning for Families **Credits: 3**
- PFP 766 - Insurance Planning for Families **Credits: 3**
- PFP 772 - Personal Income Taxation **Credits: 3**
- PFP 836 - Financial Planning Case Studies **Credits: 3**

Financial Therapy (12 credit hours)

- PFP 768 - Introduction to Financial Therapy **Credits: 3**
- PFP 769 - Money and Relationships **Credits: 3**
- PFP 770 - Applied Behavioral Finance **Credits: 3**

- PFP 771 - Financial Therapy Theory & Research **Credits: 3**

Advanced Financial Planning (12 credit hours)

- PFP 835 - Professional Practice Management in Personal Financial Planning **Credits: 3**
- PFP 860 - Advanced Retirement Planning Issues **Credits: 3**
- PFP 863 - Advanced Personal Income Tax Planning **Credits: 3**
- PFP 864 - Advanced Estate Planning Issues **Credits: 3**

Electives (0-12 credit hours)

- PFP 756 - Financial Counseling **Credits: 3**
- PFP 782 - Investing for the Family's Future II **Credits: 3**
- PFP 808 - Research Application in Personal Financial Planning **Credits: 3**
- PFP 836 - Financial Planning Case Studies **Credits: 3**
- CNRES 751 - Interpersonal Conflict Skills and Strategies **Credits: 3**
- LEAD 701 - Foundations of Leadership **Credits: 3**

Total Credit Hours Required for Master's: 30

School of Health Sciences

The School of Health Sciences offers the following Master of Science (MS) programs: Athletic Training, Communication Sciences and Disorders, Food, Nutrition and Health, Kinesiology and Physician Assistant along with a Doctor of Philosophy (PhD) in Food, Nutrition, Dietetics and Health. The school also offer accelerated BS/MS and BS/MPH options that allows high-achieving students to more efficiently obtain their graduate degree.

Accelerated

Accelerated Dietetics (BS)/Food, Nutrition, and Health (MS)

The accelerated Accelerated Dietetics (BS)/Food, Nutrition, and Health (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Food, Nutrition, and Health degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The student will: complete K-State Graduate School application online, and submit application fee following instructions provided; submit a statement of academic objective(s) and preferred primary advisor with the application; submit three letters of recommendation; and submit transcript(s) of all undergraduate work to **Slate**.

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Admission Requirements

The following requirements must be met before an individual can be admitted into the accelerated program:

- Student must be currently seeking a B.S. degree in the department of Food, Nutrition, Dietetics, and Health at K-State. A student who has completed a B.S. degree is not eligible for the accelerated program.
- Student must have completed at least 75 credit hours towards the B.S. degree.
- The student's cumulative undergraduate GPA must be at least 3.25 at the time of application.

Other admission requirements include: copies of transcripts; one professional recommendation, contact information for two additional professional references, and applicant form detailing interest, skills and experiences.

Applications are holistically reviewed to determine recommendations for admission. A faculty member must agree to be an applicant's advisor before a recommendation can be made to the Graduate School that the applicant be admitted. All applications will be considered for institutional or departmental awards and graduate assistantships.

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Prospective students please visit <https://www.hhs.k-state.edu/fndh/graduate/requirements.html>. International students should check the Graduate School requirements for English proficiency at <http://www.k-state.edu/grad/students/international.html>.

Program Specific Admission Requirements

A maximum of 9 graduate credit hours from the Food, Nutrition and Health (MS) degree will satisfy the requirements for the B.S. degree program in the FNDH department. In consultation with their major professor and undergraduate advisor students must enroll in these courses for graduate credit.

Once a student is admitted to the accelerated BS/MS degree program, the student should consult the graduate school handbook for policies and procedures for M.S. degrees, which include supervisory committee, final examination, and thesis defense, etc. The student will work closely with his/her major professor to form a supervisory committee and file a program of study specifying required courses. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress (including thesis, report or course-work only option) for the M.S. degree.

Admission to the graduate program is provisional until the student completes the B.S. degree requirements.

In the event that a student begins this program, but does not finish the M.S. Food, Nutrition and Health degree requirements, he/she must change the nine credit hours of his/her graduate classes to undergraduate credit to receive the B.S. degree.

Any student who has already graduated with a B.S. in the department of Food, Nutrition, Dietetics and Health at K-State is not eligible for the accelerated B.S./M.S. program. The student must apply for and start in the program before completing the B.S. degree (generally prior to senior year).

Course Requirements

Food, Nutrition and Health (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- **FNDH 600 - Public Health Nutrition Credits: 3**

- FNDH 620 - Nutrient Metabolism **Credits: 3**
- FNDH 631 - Clinical Nutrition I **Credits: 3**
- FNDH 632 - Clinical Nutrition II **Credits: 3**
- FNDH 635 - Sports Nutrition **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Integrative Physiology (BS)/Kinesiology (MS)

The accelerated Accelerated Integrative Physiology (BS)/Kinesiology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Kinesiology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the traditional MS degree except that completion of the BS Integrative Physiology degree is not required. The following requirements must be met before an individual can be admitted into this program:

The student must have completed the Kinesiology undergraduate core (KIN 220, KIN 310, KIN 335, KIN 336, and KIN 345)

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

Since there is some overlap between undergraduate and graduate study, some graduate courses will satisfy the degree requirements of the undergraduate degree. A maximum of 9 graduate credit hours from the MS KIN degree may be counted toward the bachelor's degree in Integrative Physiology. Some additional conditions are:

- The student must complete 30 (thesis) or 36 (coursework) graduate credit hours with a graduate GPA of at least 3.0.

- The student must complete all undergraduate degree requirements with the exception of up to 9 credit hours taken at the 600 or 700 level that satisfy the undergraduate and graduate program requirements.
- At least 18 of the graduate credit hours on the Graduate Program of Study must be in classes at the 700 level or above.
- A student pursuing a thesis format must complete at least 6 credit hours of Master's Thesis (KIN 899).

Once an individual is admitted to the accelerated BS Integrative Physiology/MS KIN degree program, the student should consult the graduate handbook for policies and procedures for graduate degrees, which include: supervisory committee, final examination, thesis defense, etc. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Course Requirements

Kinesiology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- KIN 701 - Cardiorespiratory Physiology **Credits: 3**
- KIN 703 - Cardiovascular Physiology **Credits: 3**
- KIN 707 - Muscle Physiology **Credits: 3**
- KIN 709 - Environmental Physiology **Credits: 3**
- KIN 711 - Autonomic Neurophysiology **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Kinesiology (BS)/Kinesiology (MS)

The accelerated Accelerated Kinesiology (BS)/Kinesiology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Kinesiology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The application process is the same as for the traditional M.S. degree except that completion of the B.S. degree is not required. The following requirements must be met before an individual can be admitted into this program:

The student must have completed the Kinesiology undergraduate major lower level core courses (KIN 220, KIN 310, KIN 335, KIN 336, and KIN 345).

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

Since there is some overlap between undergraduate and graduate study, some graduate courses will satisfy the degree requirements of the undergraduate degree. A maximum of 9 graduate credit hours from the M.S. KIN degree may be counted toward the B.S.KIN degree. Some additional conditions are:

- The student must complete 30 (thesis) or 36 (coursework) graduate credit hours with a graduate GPA of at least 3.0.
- The student must complete all B.S. KIN undergraduate degree requirements with the exception of up to 9 credit hours taken at the 600 or 700 level that satisfy the undergraduate and graduate program requirements.
- At least 18 of the graduate credit hours on the Graduate Program of Study must be in classes at the 700 level or above.
- A student pursuing a thesis format must complete at least 6 credit hours of Master's Thesis (KIN 899).

Once an individual is admitted to the accelerated B.S. /M.S. KIN degree program, the student should consult the graduate handbook for policies and procedures for graduate degrees, which include: supervisory committee, final examination, thesis defense, etc. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Degree requirements for the M.S. are as described in the Kinesiology (MS) section.

Course Requirements

Kinesiology (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- KIN 625 - Exercise Testing and Prescription **Credits: 3**
- KIN 700 - Interpersonal Aspects of Physical Activity **Credits: 3**
- KIN 703 - Cardiovascular Physiology **Credits: 3**
- KIN 707 - Muscle Physiology **Credits: 3**
- KIN 755 - Individual Physical Activity Promotion **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Nutrition and Health (BS)/Food, Nutrition and Health (MS)

The accelerated Accelerated Nutrition and Health (BS)/Food, Nutrition and Health (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Food, Nutrition and Health degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate electives.

Application Process

The student will: complete K-State Graduate School application online, and submit application fee following instructions provided; submit a statement of academic objective(s) and preferred primary advisor with the application; submit three letters of recommendation; and submit transcript(s) of all undergraduate work to Slate

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.250.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

A maximum of 9 graduate credit hours from the Food, Nutrition and Health (MS) degree will satisfy the requirements for the B.S. degree program in the FNDH department. In consultation with their major professor and undergraduate advisor students must enroll in these courses for graduate credit.

Once a student is admitted to the accelerated BS/MS degree program, the student should consult the graduate school handbook for policies and procedures for M.S. degrees, which include supervisory committee, final examination, and thesis defense, etc. The student will work closely with his/her major professor to form a supervisory committee and file a program of study specifying required courses. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress (including thesis, report or course-work only option) for the M.S. degree.

Admission to the graduate program is provisional until the student completes the B.S. degree requirements.

In the event that a student begins this program, but does not finish the M.S. Nutrition, Dietetics, and Sensory Sciences degree requirements, he/she must change the nine credit hours of his/her graduate classes to undergraduate credit to receive the B.S. degree.

Any student who has already graduated with a B.S. in the department of Food, Nutrition, Dietetics and Health at K-State is not eligible for the accelerated B.S./M.S. program. The student must apply for and start in the program before completing the B.S. degree (generally prior to senior year).

Course Requirements

Food, Nutrition and Health (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FNDH 600 - Public Health Nutrition **Credits: 3**
- FNDH 620 - Nutrient Metabolism **Credits: 3**
- FNDH 631 - Clinical Nutrition I **Credits: 3**
- FNDH 632 - Clinical Nutrition II **Credits: 3**
- FNDH 635 - Sports Nutrition **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Nutritional Sciences (BS)/Food, Nutrition, and Health (MS)

The accelerated Accelerated Nutritional Sciences (BS)/Food, Nutrition, and Health (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Food, Nutrition, and Health degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate electives.

Application Process

The student will: complete K-State Graduate School application online, and submit application fee following instructions provided; submit a statement of academic objective(s) and preferred primary advisor with the application; submit three letters of recommendation; and submit transcript(s) of all undergraduate work to CollegeNet.

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.250.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

A maximum of 9 graduate credit hours from the Food, Nutrition, and Health (MS) degree will satisfy the requirements for the B.S. degree program in the FNDH department. In consultation with their major professor and undergraduate advisor students must enroll in these courses for graduate credit.

Once a student is admitted to the accelerated BS/MS degree program, the student should consult the graduate school handbook for policies and procedures for M.S. degrees, which include supervisory committee, final examination, and thesis defense, etc. The student will work closely with his/her major professor to form a supervisory committee and file a program of study specifying required courses. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress (including thesis, report or course-work only option) for the M.S. degree.

Admission to the graduate program is provisional until the student completes the B.S. degree requirements.

In the event that a student begins this program, but does not finish the M.S. Nutrition, Dietetics, and Sensory Sciences degree requirements, he/she must change the nine credit hours of his/her graduate classes to undergraduate credit to receive the B.S. degree.

Any student who has already graduated with a B.S. in the department of Food, Nutrition, Dietetics and Health at K-State is not eligible for the accelerated B.S./M.S. program. The student must apply for and start in the program before completing the B.S. degree (generally prior to senior year).

Course Requirements

Food, Nutrition and Health (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FNDH 600 - Public Health Nutrition **Credits: 3**
- FNDH 620 - Nutrient Metabolism **Credits: 3**
- FNDH 631 - Clinical Nutrition I **Credits: 3**
- FNDH 632 - Clinical Nutrition II **Credits: 3**

- FNDH 635 - Sports Nutrition Credits: 3

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Public Health (BS)/Kinesiology (MS)

The accelerated Accelerated Public Health (BS)/Kinesiology (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Kinesiology degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

Since there is some overlap between undergraduate and graduate study, some graduate courses will satisfy the degree requirements of the undergraduate degree. A maximum of 9 graduate credit hours from the M.S. KIN degree may be counted toward the bachelor's degree in Public Health. Some additional conditions are:

- The student must complete 30 (thesis) or 36 (coursework) graduate credit hours with a graduate GPA of at least 3.0.
- The student must complete all undergraduate degree requirements with the exception of up to 9 credit hours taken at the 600 or 700 level that satisfy the undergraduate and graduate program requirements.
- At least 18 of the graduate credit hours on the Graduate Program of Study must be in classes at the 700 level or above.
- A student pursuing a thesis format must complete at least 6 credit hours of Master's Thesis (KIN 899).

Once an individual is admitted to the accelerated BS Public Health/MS KIN degree program, the student should consult the graduate handbook for policies and procedures for graduate degrees, which include: supervisory committee, final examination, thesis defense, etc. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The B.S. degree will be awarded following the completion of the undergraduate degree requirements.

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- KIN 622 - Capstone Project in Public Health **Credits: 2**
- KIN 710 - Program Planning and Evaluation **Credits: 3**
- KIN 712 - Policy, Built Environment and Physical Activity **Credits: 3**
- KIN 716 - Obesity and Physical Activity: Behavioral, Environment, and Policy Influences **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Public Health (BS)/Master of Public Health (MPH)

The accelerated Accelerated Public Health (BS)/Master of Public Health (MPH) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Public Health degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FNDH 600 - Public Health Nutrition **Credits: 3**
- KIN 622 - Capstone Project in Public Health **Credits: 2**
- KIN 710 - Program Planning and Evaluation **Credits: 3**
- KIN 712 - Policy, Built Environment and Physical Activity **Credits: 3**
- MPH 720 - Administration of Health Care Organizations **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Sports Nutrition (BS)/Food, Nutrition and Health (MS)

The accelerated Accelerated Sports Nutrition (BS)/Food, Nutrition and Health (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Food, Nutrition and Health degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Application Process

The student will: complete K-State Graduate School application online, and submit application fee following instructions provided; submit a statement of academic objective(s) and preferred primary advisor with the application; submit three letters of recommendation; and submit transcript(s) of all undergraduate work to Slate

Students are responsible for researching financial aid implications of starting an accelerated degree program.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.250.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Program Specific Admission Requirements

A maximum of 9 graduate credit hours from the Food, Nutrition and Health (MS) degree will satisfy the requirements for the B.S. degree program in the FNDH department. In consultation with their major professor and undergraduate advisor students must enroll in these courses for graduate credit.

Once a student is admitted to the accelerated BS/MS degree program, the student should consult the graduate school handbook for policies and procedures for M.S. degrees, which include supervisory committee, final examination, and thesis defense, etc. The student will work closely with his/her major professor to form a supervisory committee and file a program of study specifying required courses. The student's supervisory committee must approve the program of study, which is a statement of the student's graduation requirements. The undergraduate advisor will continue to advise the student in academic progress toward the B.S. degree, and the major professor will supervise the student's academic progress (including thesis, report or course-work only option) for the M.S. degree.

Admission to the graduate program is provisional until the student completes the B.S. degree requirements.

In the event that a student begins this program, but does not finish the M.S. Food, Nutrition and Health degree requirements, he/she must change the nine credit hours of his/her graduate classes to undergraduate credit to receive the B.S. degree.

Any student who has already graduated with a B.S. in the department of Food, Nutrition, Dietetics and Health at K-State is not eligible for the accelerated B.S./M.S. program. The student must apply for and start in the program before completing the B.S. degree (generally prior to senior year).

Course Requirements

Food, Nutrition and Health (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- FNDH 600 - Public Health Nutrition **Credits: 3**
- FNDH 620 - Nutrient Metabolism **Credits: 3**
- FNDH 631 - Clinical Nutrition I **Credits: 3**
- FNDH 632 - Clinical Nutrition II **Credits: 3**
- FNDH 635 - Sports Nutrition **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Food, Nutrition, Dietetics and Health (PHD)

Admission Requirements

Competitive applicants will have a science background appropriate for our degree programs.

Recommendations concerning an applicant's qualifications and admission are made to the Dean of the Graduate School by the department. The final decision regarding admission of an applicant is made by the Dean of the Graduate School.

Admission to graduate study at Kansas State University is granted on three bases: full standing, provisional, or probational.

Admission in full standing requires a minimum grade point average of 3.0 (B average) in the last 60 hours of undergraduate work in an institution whose requirements for the bachelor's degree are equivalent to those of Kansas State University. Applicants with grade point averages below 3.0 may be considered for probational admission provided there is evidence that the applicant has the ability to do satisfactory graduate work. Provisional admission may be granted to applicants who have subject deficiencies in undergraduate preparation as mentioned above or if there is uncertainty in evaluating the transcript.

Other admission requirements include: copies of transcripts; three professional recommendations; and applicant form detailing interest, skills, and experiences.

Applications are holistically reviewed to determine recommendations for admission.

A faculty member must agree to be an applicant's advisor before a recommendation can be made to the Graduate School that the applicant be admitted. All applications will be considered for institutional or departmental awards and graduate assistantships.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

The Ph.D. requires 90 credits post-baccalaureate, including a minimum of 30 credits for the Ph.D. dissertation. No foreign language is required.

Programs of study are developed according to the interests, backgrounds, and career goals of the students. In addition to graduate human nutrition courses, students often include courses from other departments such as animal sciences and industry; grain science and industry; biochemistry; chemistry; anatomy and physiology; kinesiology; psychology; and biology; from the Colleges of Business Administration and Education; and from interdisciplinary international courses.

Required Courses

Department Requirement (11 hours)

- STAT 705 - Regression and Analysis of Variance **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**
- FNDH 880 - Professional Communication in FNDH **Credits: 1**
- FNDH 980 - Graduate Seminar in Food, Nutrition, Dietetics and Health **Credits: 1**
- FNDH 995 - Grantsmanship and Publication **Credits: 3**
- OR
- SENS 958 - Critical Experiences in Industry Research **Credits: 3-6**

Area of Specialization

Students can work with distinguished graduate faculty and choose to emphasize their study in a particular area, including:

Public Health Physical Activity

Specialization core (9 hours):

- KIN 797 - Topics in Public Health Physical Activity Behavior **Credits: 3**
- KIN 805 - Physical Activity and Human Behavior **Credits: 3**
- KIN 830 - Advanced Public Health Physical Activity **Credits: 3**
- Six credits must come from additional FNDH course work excluding FNDH 999.
- FNDH, KIN and other graduate level courses as suggested by the supervisory committee.

Public Health Nutrition

Specialization core (9 hours):

- FNDH 844 - Nutritional Epidemiology **Credits: 3**
- Six (6) FNDH credits from the following:
 - FNDH 735 - Advanced Energy Balance **Credits: 3**
 - FNDH 800 - Nutrition Education and Communication **Credits: 3**
 - FNDH 820 - Functional Foods for Chronic Disease Prevention **Credits: 3**
 - SENS 841 - Consumer Research - Fundamentals **Credits: 1**
 - FNDH 911 - Advanced Nutrition Topics: Contemporary Issues **Credits: 1-3**
- FNDH, KIN and other graduate level courses as suggested by the supervisory committee.
- Three credits must come from KIN 600 or above.

Nutritional Sciences

Specialization core (11 hours):

- FNDH 810 - Advanced Macronutrient Metabolism **Credits: 5**
- FNDH 812 - Advanced Micronutrient Metabolism **Credits: 3**
- 3 credit hours of FNDH 700 level or above
- Select from additional graduate level courses in FNDH or other graduate level courses as suggested by the supervisory committee.

Sensory Analysis and Consumer Behavior

Specialization core (10 hours):

- SENS 833 - Descriptive Sensory Analysis: Methods **Credits: 1**
- SENS 843 - Consumer Research - Qualitative **Credits: 1**
- SENS 848 - Consumer Research – Quantitative **Credits: 1**
- SENS 958 - Critical Experiences in Industry Research **Credits: 3-6**

- Select 4-7 additional hours (not including SENS 701 or SENS 841) from the other specialized Descriptive Sensory Analysis and Consumer Behavior courses.

Additional Courses

To fulfill the 30-hour core requirement, the student can select additional graduate level courses in FNDH or other graduate level courses as suggested by the supervisory committee to ensure the minimum course credits are met.

Dissertation (30 hours)

Total Hours Required for Doctorate: 90

Health and Human Sciences - Kinesiology (PHD)

The Department of Kinesiology participates in the Ph.D. program in the College of Health and Human Sciences with a specialization in Kinesiology. Students are prepared to conduct research in exercise physiology or exercise behavioral science.

Admission Requirements

The Ph.D. requires a minimum of 90 semester credit hours beyond the bachelor's degree, including 30 credit hours of dissertation research. The number of hours from a previously completed master's degree which may be counted toward the 90-hour requirement is decided by the student's supervisory committee and is reviewed by the Graduate School. A maximum of 30 hours may be transferred from a completed master's degree. A maximum of 9 credit hours can be transferred from graduate work completed after the master's degree at another accredited university. Doctoral students are required to pass both written and oral preliminary examinations prior to admission to candidacy.

- 90 credit hours minimum
- 30 credit hours minimum of dissertation research
- 15 credit hours minimum at the 800 level or above
- 6 credit hours maximum at the 500 level
- 6 credit hours maximum of independent study
- 30 credit hours maximum from master's degree
- Dissertation: preparing three or more papers for publication in exercise physiology or exercise behavioral science.

Course Requirements

Core Requirements (12 Credit Hours)

- KIN 815 - Research Methods in Kinesiology **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**

Other Coursework in Major Area (18 Credit Hours)

Students develop a plan of study with their major professor and graduate committee to develop an expertise in exercise physiology or exercise behavioral science. Students may select from the list below or other courses to fulfill the requirement.

Exercise Physiology

Choose from the following courses:

- KIN 601 - Cardiorespiratory Physiology Credits: 3
- KIN 603 - Cardiovascular Physiology Credits: 3
- KIN 605 - Topics in the Biological Basis of Kinesiology Credits: 1-3
- KIN 607 - Muscle Physiology Credits: 3
- KIN 609 - Environmental Physiology Credits: 3
- KIN 625 - Exercise Testing and Prescription Credits: 3
- KIN 635 - Nutrition and Exercise Credits: 3
- KIN 650 - Development of Motor Control Credits: 3
- KIN 657 - Integrative Human Pathophysiology Credits: 3
- KIN 800 - Advanced Physiology of Exercise Credits: 3
- KIN 822 - Advanced Muscle Physiology Credits: 3
- KIN 824 - Physiology of Oxygen Transport Credits: 3
- KIN 826 - Advanced Cardiovascular Physiology Credits: 3
- KIN 896 - Independent Study in Kinesiology Credits: 1-4

Exercise Behavioral Science

Choose from the following courses:

- KIN 602 - Social Structural Determinants of Physical Activity Credits: 3
- KIN 606 - Topics in the Behavioral Basis of Kinesiology Credits: 1-3
- KIN 610 - Program Planning and Evaluation Credits: 3
- KIN 612 - Policy, Built Environment and Physical Activity Credits: 3
- KIN 655 - Individual Physical Activity Promotion Credits: 3
- KIN 793 - Internship/Public Health Physical Activity Credits: 1-8
- KIN 797 - Topics in Public Health Physical Activity Behavior Credits: 3
- KIN 805 - Physical Activity and Human Behavior Credits: 3
- KIN 808 - Social Epidemiology of Physical Activity Credits: 3
- KIN 818 - Social and Behavioral Bases of Public Health Credits: 3
- KIN 835 - Group Dynamics and Physical Activity Credits: 3
- KIN 840 - Public Health Practice Credits: 3-6
- KIN 845 - Exercise Adherence Credits: 3
- KIN 855 - Exercise Psychology in Special Populations Credits: 3
- KIN 896 - Independent Study in Kinesiology Credits: 1-4

Dissertation Research (30 Credit Hours)

- KIN 999 - Dissertation Research Credits: 1-15

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Master of Science

Athletic Training (MS)

This curriculum will provide theoretical and clinical application experience in the five professional practice domains of Athletic Training: injury/illness prevention and wellness protection, clinical evaluation and diagnosis, immediate and emergency care, treatment and rehabilitation, and organizational and professional health and well-being.

Graduates will use research, innovative methods, and evidence-based healthcare practices with their clients in secondary schools, colleges and universities, hospitals, clinics, industry, military, and the performing arts.

Admission Requirements

Students entering the Food, Nutrition, Dietetics, and Health graduate program are expected to have a bachelor's degree from an accredited institution. Competitive applicants will have a science background appropriate for our degree programs. Recommendations concerning an applicant's qualifications and admission are made to the dean of the Graduate School by the department. The final decision regarding admission of an applicant is made by the dean of the Graduate School.

Admission to graduate study at Kansas State University is granted on three bases: full standing, provisional, or probational. Admission in full standing requires a minimum grade point average of 3.0 (B average) in the last 60 hours of undergraduate work in an institution whose requirements for the bachelor's degree are equivalent to those of Kansas State University. Applicants with grade point averages below 3.0 may be considered for probational admission provided there is evidence that the applicant has the ability to do satisfactory graduate work. Provisional admission may be granted to applicants who have subject deficiencies in undergraduate preparation as mentioned above or if there is uncertainty in evaluating the transcript.

Other admission requirements include: copies of transcripts; three professional recommendations; and applicant form detailing interest, skills and experiences.

Applications are holistically reviewed to determine recommendations for admission. A faculty member must agree to be an applicant's advisor before a recommendation can be made to the Graduate School that the applicant be admitted. All applications will be considered for institutional or departmental awards and graduate assistantships.

Prospective students please visit <https://www.hhs.k-state.edu/academics/graduate.html>. For international students, please check the Graduate School requirements for English proficiency at <https://www.k-state.edu/grad/students/international.html>.

Special Requirements

Students interested in the Master's of Science in Athletic Training (MSAT) professional graduate program can enter the program in one of the following ways:

1. The 5-year master's program or the post-baccalaureate program. Current Kansas State University students can apply after completion of 90 or more credits from Kansas State University or the transfer equivalent credits that includes all pre-requisite courses listed below.

2. Post-Baccalaureate. Students can apply after graduation, or with verification of graduation, from a baccalaureate degree program from an accredited institution and completion of all pre-requisite courses.

Acceptance into the 5-year Master's program is a selective process and requires a minimum 3.25 GPA, submission of a complete application packet, admission to the graduate school, three letters of recommendation, statement of objectives, copies of transcripts, GRE score to meet the requirements of the Department of Food, Nutrition, Dietetics and Health, verified completion of 25 observation hours under the supervision of a Certified Athletic Trainer, participation in an interview in the Spring of their application year, and verified completion of the prerequisite courses at Kansas State University or the transfer equivalent of the prerequisite courses.

Students accepted into the 5-year MSAT program will be considered graduate students in the fall semester following their acceptance into the MSAT Program. This may impact undergraduate financial aid, tuition assistance and undergraduate scholarships.

The Post-Baccalaureate admission will require a BA or BS from an accredited institution, a minimum 3.0 GPA, submission of a complete application packet, admission to the graduate school, three letters of recommendation, statement of objectives, copies of transcripts, GRE score to meet the requirements of the Department of Food, Nutrition, Dietetics and Health, verified completion of 25 hours of observation of a certified athletic trainer, and verified completion of the pre-requisite courses at Kansas State University or the transfer equivalent of the following prerequisite courses:

Prerequisite Courses:

- PSYCH 110 - General Psychology
- STAT 225 - Introduction to Statistics
- BIOL 198 - Principles of Biology
- FNDH 220 - Care and Prevention of Athletic Injuries
- FNDH 132 - Basic Nutrition
- PHYS 113 - General Physics I with lab
- CHM 210 - Chemistry I with lab
- KIN 330 - Biomechanics
- KIN 335 - Physiology of Exercise
- 8 hours of Human Anatomy and Physiology with lab

Choose one of the following:

- BIOL 441 - Human Body I **Credits: 4** and
- BIOL 442 - Human Body II **Credits: 4**

or

- KIN 360 - Anatomy and Physiology **Credits: 8**

Total hours required: 57-63

Course Requirements

The coursework only option for this program does not require a culminating experience.

Required Courses

- FNDH 709 - Clinical Applications of Human Anatomy **Credits: 3**
- FNDH 710 - Foundations of Patient Management **Credits: 2**
- FNDH 752 - Emergency Management in Athletic Training **Credits: 3**
- FNDH 755 - Clinical Applications of Neurological Function **Credits: 3**
- FNDH 799 - Foundations of Therapeutic Interventions **Credits: 3**
- FNDH 802 - Clinical Therapeutic Interventions I- Functional Therapeutic Interventions **Credits: 3**
- FNDH 803 - Clinical Therapeutic Interventions II- Extremity Interventions **Credits: 3**
- FNDH 804 - Clinical Therapeutic Interventions III- Pharmacology, Nutrition, and Behavior Modification **Credits: 2**
- FNDH 821 - Clinical Evaluation I-Core Evaluation **Credits: 3**
- FNDH 822 - Clinical Evaluation II-Extremities **Credits: 3**
- FNDH 823 - Clinical Evaluation III- General Medical Conditions **Credits: 3**
- FNDH 858 - Durable Medical Equipment and Casting **Credits: 2**
- FNDH 880 - Professional Communication in FNDH **Credits: 1**
- FNDH 883 - Athletic Training Practicum I **Credits: 1**
- FNDH 884 - Athletic Training Practicum II **Credits: 1**
- FNDH 885 - Athletic Training Practicum III **Credits: 1**
- FNDH 886 - Athletic Training Practicum IV **Credits: 1**
- FNDH 887 - Athletic Training Practicum V **Credits: 4**
- FNDH 888 - Athletic Training Practicum VI **Credits: 4**
- FNDH 892 - Population Health in Sports Medicine **Credits: 3**
- FNDH 720 - Administration of Health Care Organizations **Credits: 3**
- FNDH 857 - Administration in Athletic Training **Credits: 3**
- FNDH 897 - Applications in Food, Nutrition, Dietetics and Health **Credits: 1-3**
- FNDH 720 - Administration of Health Care Organizations **Credits: 3**
- FNDH 857 - Administration in Athletic Training **Credits: 3**

Thesis Option Courses

- FNDH 899 - Master's Thesis **Credits: 1-8**
(6 credits required)
Choose one of the following Research Courses:
- FNDH 775 - Research in Health Sciences **Credits: 3**
- HHS 888 - Foundations in Research Methodology **Credits: 3**

Coursework Only Option Courses

- FNDH 889 - Research Experience in Athletic Training **Credits: 1**
- PAS 720 - Evidence Based Medicine **Credits: 1**

Total Hours Required for Master's: 57-63

Communication Sciences and Disorders (MS)

The school of Health Sciences offers a Master of Science degree in Communication Sciences and Disorders. The goal of the CSD program is to educate clinicians who are competent to help children and adults with difficulties in any aspect of oral and written communication or swallowing (i.e., speech-language pathology). The master's degree program is a full-time, two-year program, starting either in the summer, fall, or spring semesters.

The objectives of this professional education program are to:

1. Prepare speech-language pathologists to fill diverse roles in the broad area of speech-language pathology and in a variety of professional environments consistent with evidence-based practice;
2. Provide the student with knowledge about the changing role of the speech-language pathologist within our society and with opportunities to learn how research informs that change;
3. Facilitate an interdisciplinary view of disorders of human communication;
4. Provide speech-language pathologists with the coursework and practicum experiences needed to meet national standards for clinical knowledge and skills and to earn the Certificate of Clinical Competence (CCC) awarded by the American Speech-Language-Hearing Association.

Kansas State University is fully accredited by the North Central Accrediting Association. In addition, the Master of Science (M.S.) education program in Speech-Language Pathology (residential) at Kansas State University is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 2200 Research Boulevard #310, Rockville, Maryland 20850, 800-498-2071 or 301-296-5700.

Please review the following website to read more specific information about graduate application procedures and forms for communication sciences & disorders: Graduate Program (k-state.edu)

Course Requirements

For the Master of Science degree, the following requirements must be met:

1. Completion of a minimum of 31 graduate credit hours in academic coursework with additional credits from practica and externships.
2. Completion of two unique externships, typically full-day placements extending throughout the semester at an approved off-campus site.
3. Completion of a minimum of 400 total clinical hours (which includes 25 clinical observation hours and 375 direct clinical contact hours).
4. Demonstration of clinical competency as judged by the Program faculty.

Students selecting the non-thesis option must also successfully complete the comprehensive written examination and oral examination if indicated.

Students selecting the thesis option must complete six hours of thesis credit, design, implement, and produce a written thesis on a research topic in accordance with graduate school guidelines and successfully defend the thesis in an oral examination.

The graduate curriculum in Communication Sciences and Disorders prepares students with the basic course requirements for certification as a speech-language pathologist by the American Speech-Language-Hearing Association (ASHA), and prepares students to pass the national examination in speech-language pathology & audiology (NESPA). The pass rate of KSU graduates (first try) is 100% since 2004.

Required Courses

50 credit hours

- CSD 705 - Practicum in Speech-Language Pathology **Credits: 1-3**
- CSD 706 - Practicum in Audiology **Credits: 1-3**
- CSD 725 - Augmentative and Alternative Communication **Credits: 2**
- CSD 741 - Stuttering **Credits: 3**
- CSD 742 - Language Assessment and Intervention II **Credits: 3**
- CSD 743 - Communication Impairments in Autism Spectrum Disorders **Credits: 2**
- CSD 745 - Motor Speech Disorders **Credits: 3**
- CSD 748 - Cleft Palate **Credits: 1**
- CSD 750 - Voice Disorders **Credits: 3**
- CSD 780 - Instrumental Measurement for Clinical Application **Credits: 2**
- CSD 841 - Acquired Language and Cognitive Disorders **Credits: 4**
- CSD 844 - Dysphagia **Credits: 4**
- CSD 847 - Externship in Speech-Language Pathology **Credits: 3-12**
- CSD 851 - Professional Issues in Speech-Language Pathology **Credits: 3**

Thesis Option Course

6 credit hours

- CSD 899 - MS Research in Communication Sciences and Disorders **Credits: 1-8**

Coursework Only Option Course

1 credit hour

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

- CSD 701 - Research Experience in Communication Sciences and Disorders **Credits: 1**

Notes

Please review the following website to read more specific information about graduate application procedures and forms for communication sciences& disorders: Graduate Program (k-state. edu)

Students interested in this option with questions about the curriculum or admission should contact:

Dr. Jeridy Oetken or Dr. Jane Garcia

Communication Sciences & Disorders
139 Campus Creek Complex
1405 Campus Creek Road
Kansas State University
Manhattan, KS 66506
(785) 532-6879

jeridy@ksu.edu or jgarcia@ksu.edu

Information concerning academic grievances and grievances against faculty can be found online at: Graduate Student Rights and Grievances Procedures (k-state.edu)

Program complaints or grievances can be forwarded to the Council on Academic Accreditation (CAA) through the American Speech-Language-Hearing Association. Details are available online at: Complaints (asha.org)

K-State notice of nondiscrimination policy can be accessed at: Notice of Nondiscrimination (k-state.edu)

Total Hours Required for Master's: 51-56

Dietetics (MS)

The Department of Food, Nutrition, Dietetics and Health (FNDH) offers an online Master of Science degree in Dietetics for registered dietitians (RDs). This program is offered through the Innovative Digital Education Alliance (IDEA). IDEA is a consortium of universities that collaborate to offer online graduate programs. The online Master of Science in Dietetics through the IDEA is offered by the following universities:

- Kansas State University
- The University of Kansas Medical Center
- Iowa State University
- Colorado State University
- The University of Nebraska, Lincoln
- North Dakota State University
- Oklahoma State University

Upon request, the student's graduate committee will evaluate whether graduate practicum credit earned prior to application will count toward the student's current degree plan. It is the responsibility of the student to provide requested and appropriate documentation to facilitate evaluation.

Admission Requirements

Application for admission should include the following information:

- The applicant must hold the credential of Registered Dietitian (RD) through the Commission on Dietetic Registration of the Academy of Nutrition and Dietetics. Individuals who hold credentials offered by the following foreign regulatory boards are also eligible to apply:
 - Dietitians of Canada (DC)
 - Dutch Association of Dietitians/Ministry of Welfare, Public Health and Culture (NVD)
 - Philippine Professional Regulation Commission (PRC)
 - Irish Nutrition and Dietetic Institute (INDI)
 - Health Professions Council (HCPC) United Kingdom

A copy of the applicant's CDR registration card or other official documentation of registration status must be submitted with the application.

Or, if the applicant does not hold the credential of Registered Dietitian (RD), the applicant must provide their verification statement issued by a program accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

- The applicant must submit official transcripts for all college coursework. A minimum undergraduate grade point average of 3.0 (or alternately, a GPA of 3.0 on the last 60 hours of coursework in the undergraduate degree) is required for admission to this program.

- The applicant must submit three professional recommendations. Individuals writing the references must be able to attest to the applicant's academic abilities and professional leadership potential.
- A completed applicant form detailing interest, skills, and experiences.

Students pursuing the thesis option must conduct research compatible with on-going research in FNDH.

Admission Deadlines

Deadline for applications is October 1 for spring semester admission or March 1 for summer or fall semester admission.

Course Requirements

Required Courses

(9 Credit Hours)

- FNDH 775 - Research in Health Sciences **Credits: 3**
or *equivalent
- FNDH 891 - Environmental Scanning and Analysis of Current Issues in Dietetics **Credits: 3**
- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
OR
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
or *equivalent

*Equivalent courses must be approved by the supervisory committee.

Elective Courses

(21 credit hours)

Additional FNDH courses (minimum 21 credits), or equivalent courses approved by the supervisory committee, at the graduate level are required. The major professor and the supervisory committee will work with the student to select courses that will meet the requirements and support the graduate student's professional development.

Thesis/Non-Thesis

(6 credit hours)

Students may elect to complete a thesis (6 credit hours of FNDH 899 Research in FNDH) OR they may elect the non-thesis option and take 6 additional credit hours from program electives.

Students completing a thesis will be required to put together a written document under the direction of their major professor and supervisory committee followed by an oral examination with their supervisory committee with an emphasis on the written document. The thesis topic must be compatible with on-going research in FNDH. Students will present a formal seminar of their research findings followed by an oral examination with their supervisory committee.

Non-thesis students may take 6 additional credit hours from program electives, OR pursue 3 additional credits from program electives plus a 3-hour dietetics practice/work-related project (FNDH 780 Problems in Food, Nutrition, Dietetics and Health) under the direction of their major professor and supervisory committee. The student will complete a written document, present a seminar about the topic followed by an oral examination with their supervisory committee with an emphasis on the written document.

Of the required 36 credit hours for the Master of Science Dietetics degree, at least 18 hours should be at the 700 level and above, including the thesis/research and the report/problems hours required by the thesis and report options.

Students admitted to any graduate program at Kansas State University may also elect to pursue a Graduate Certificate in one of the graduate certificate programs offered. Students must apply for admission to a graduate certificate program. Graduate students working toward advanced degrees may use any or all of the certificate courses in a program of study with the approval of the student's supervisory committee.

Total Hours Required for Master's: 36

Food, Nutrition and Health (MS)

The **Master's of Science program in Food, Nutrition and Health** prepares graduates to pursue a wide variety of health-related careers.

Students who have completed a Bachelor of Science in Dietetics and wish to receive Registered Dietitian Nutritionist (RDN) credentials can apply to the **Master's of Science Food, Nutrition and Health with concentration in Dietetic Internship (MSDI)**.

Prospective students please visit <https://www.hhs.k-state.edu/fndh/academics/graduate/nutrition-dietetics-sensory-sciences/>

The Master's of Science in Food, Nutrition and Health requires a minimum of 30 credits. Three options are available: 1) thesis; 2) report; 3) coursework-only no culminating experience.

Course Requirements

Of the minimum 30 credit hours required for the master's program of study, at least 18 hours should be at the 700 level and above.

Required Courses

At least 6 credits of FNDH courses.

Thesis Option Courses

- FNDH 880 - Professional Communication in FNDH **Credits: 1**
- FNDH 899 - Master's Thesis **Credits: 1-8**
6 credit hours required
Select one of the following:
- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

Report Option Courses

- FNDH 880 - Professional Communication in FNDH **Credits: 1**
- FNDH 898 - Master's Report **Credits: 0-18**
2 credit hours required
Select one of the following:

- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

Coursework Only Option Courses

- FNDH 897 - Applications in Food, Nutrition, Dietetics and Health **Credits: 1-3**
Select one of the following:
- FNDH 775 - Research in Health Sciences **Credits: 3**
- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

Total Hours Required for Master's: 30

Food, Nutrition, and Health (MS) with Dietetic Internship

Contact:

Brian Lindshield - blindsh@ksu.edu, 785-532-5508

Kelly Whitehair - stirtz@ksu.edu

The Dietetic Internship pathway to the Master of Science in Food, Nutrition and Health (MSDI) provides supervised practice experience in conjunction with the M.S. degree to enable baccalaureate degree graduates of Didactic Programs in Dietetics (DPDs) the opportunity to fulfill the experiential requirements to sit for the Registration Examination for Dietitians.

The Kansas State MSDI can admit up to 15 students annually. The 12-month program consists of three full-time semesters (summer, fall, and spring) in which academic coursework and supervised practice are completed in unison. At times students will be expected to be in supervised practice sites four days per week, while enrolled in additional graduate courses.

For additional details please visit <https://www.hhs.k-state.edu/fndh/academics/graduate/nutrition-dietetics-sensory-sciences/dietetic-internship.html>

The Dietetic Internship is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2190, Chicago, IL 60606-6995, 312-899-0400, <https://www.eatrightpro.org/acend>

Course Requirements

Required Courses

Of the minimum 30 graduate credit hours required for the master's program of study, at least 18 hours should be at the 700 level and above.

- FNDH 760 - Applied Dietetics **Credits: 1-6**
- **Credits: 6 required**
- FNDH 775 - Research in Health Sciences **Credits: 3**
- FNDH 860 - Dietetics Practicum **Credits: 1-6**
- **Credits: 6 required**
- FNDH 897 - Applications in Food, Nutrition, Dietetics and Health **Credits: 1-3**

Elective Courses

Complete a total of 12-14 credits of courses; at least 6 credits of FNDH courses.

Total Hours Required for Master's: 30

Kinesiology (MS)

The Department of Kinesiology offers a master of science degree. Students may emphasize exercise physiology/pathophysiology, or exercise behavioral science.

Admission Requirements

Students entering the Kinesiology graduate program must satisfy a minimum number of undergraduate competencies. These competencies are often satisfied with an undergraduate degree in kinesiology. Students without an undergraduate degree in kinesiology may be required to complete additional undergraduate coursework. Application procedures require (1) a completed graduate application form, (2) transcripts from all universities and colleges attended, (3) three letters of reference, and (4) a statement outlining professional goals and areas of special interest. Application for admission to the program in the fall semester should be made in the preceding late fall or early winter. Applications are also accepted for the spring semester.

Course Requirements

The M.S. degree in kinesiology requires a minimum of 30 hours for students completing a master's thesis option and 36 hours for students completing a course work option. The specific program of study, designed by the student and supervisory committee, is tailored to meet the individual needs and interests of the student. A maximum of 12 hours of supporting work in other departments may be applied toward the degree. All students are expected to demonstrate a depth and breadth of understanding of kinesiology in a written and/or oral final evaluation.

Required Courses

- KIN 815 - Research Methods in Kinesiology **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**

Thesis Option Courses

Complete a total of 18 hours from Kinesiology courses 600 and above; and approved courses outside the department.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Thesis

6 hours required

Coursework Only Option Courses

Complete a total of 30 hours from Kinesiology courses 600 and above; and approved courses outside the department.

Total Hours Required for Master's: 30-36

Physician Assistant (MS)

Overview of the MSPAS Program

Kansas State University physician assistant program leads to a Master of Science in Physician Assistant Studies (MSPAS) degree. The program follows the traditional medical model of training. It provides an in-depth analysis of disease processes, diagnosis, and treatment, preparing students to serve as primary health care providers who practice medicine with physician supervision.

The 27-month physician assistant program will admit 44 students annually and prepares graduates to provide medical care as part of an interprofessional health care team. The curriculum consists of three semesters of classroom training (didactic) and four semesters of clinical rotations (clinical). All students enter as a single cohort in the spring semester, complete seven continuous full-time semesters, and graduate in May with a Master of Science in Physician Assistant Studies (MSPAS) degree.

Degree Requirements

The MSPAS requires 112 graduate credit hours, 66 from didactic, and 46 from the clinical year. The program does not offer advanced placement. No credit is granted for prior work experience in the healthcare field. Furthermore, no transfer credits are accepted. The following list is the core requirements of the program.

Course Requirements

* Course varies, and may occur in any clinical year semester

Didactic to Clinical Phase. The Progression, Promotion and Professionalism (PPP) committee will recommend promotion from didactic to the clinical phase based on the following requirements:

- Earned a cumulative GPA of 3.0 or greater, with a "C" or better in each course.
- Demonstrated adherence to the University and Program policies, Guidelines for Ethical Conduct for the PA Profession and K-State Student Code of Conduct policy.*
- Participated in all program required events (unless otherwise excused by the appropriate director).
- Completed HIPAA and blood borne pathogen training.
- Provided documentation of health insurance.
- Met all the qualifications for credentialing in the clinical phase to include all required immunizations, TB skin test, passed urine drug screen, passed criminal background/sex offender check, BLS, and ACLS certification.
- Signed the Health Information Release form, allowing the K-State Physician Assistant Program to maintain and release the following information to clinical rotation sites: immunizations, TB screening status, background check, and BLS/ACLS certification.

Clinical to Graduation. The PPP committee will recommend promotion from the clinical phase of training to graduation based on the following requirements:

- Received a "B" or better in every clinical course, and the Summative*.
- Completed all 112 credit hours with a cumulative GPA of 3.0 or greater.
- Demonstrated adherence to K-State University and PA program policies, the Guidelines for Ethical Conduct for the PA Profession and K-State Student Code of Conduct policy.*

- Participated in program-required events.
- Met all K-State graduation requirements.
- Successfully completed the Summative course (PAS 895), by meeting all academic and professional standards.
- Met the K-State PA program Technical Standards.
- *In the event that the student fails a rotation, he/she will be allowed to progress to the Summative (PAS 895), but must return the following semester to retake the failed rotation, resulting in a delay in graduation. Maximum rotation retakes are set at two.

Notes:

1. Students will refer to the Physician Assistant website at <https://www.hhs.k-state.edu/pa/>, or the Didactic and Clinical Manuals for more details on program policies and procedures.
2. The ability to meet the academic and technical standards for physician assistant students is required <https://www.hhs.k-state.edu/pa/admission/>.
3. Refer to the PA program's website for further information <https://www.hhs.k-state.edu/pa/>.
4. PA program semesters do not follow the standard KSU schedule.

The coursework only option for this program does not require a culminating experience.

Didactic Courses (66 Credits)

Spring 1st Year (22)

- PAS 700 - Applied Anatomy and Physiology I **Credits: 4**
- PAS 710 - PA Profession **Credits: 1**
- PAS 720 - Evidence Based Medicine **Credits: 1**
- PAS 740 - Clinical Procedures I **Credits: 2**
- PAS 750 - Physical Diagnosis I **Credits: 2**
- PAS 760 - Diagnostics I - Laboratory **Credits: 2**
- PAS 770 - Applied Pathophysiology I **Credits: 2**
- PAS 780 - Clinical Medicine I **Credits: 6**
- PAS 790 - Pharmacology I **Credits: 2**

Summer 1 (23)

- PAS 711 - Applied Anatomy and Physiology II **Credits: 4**
- PAS 721 - Medical Genetics **Credits: 1**
- PAS 731 - Clinical Pediatrics **Credits: 2**
- PAS 741 - Clinical Procedures II **Credits: 2**
- PAS 751 - Physical Diagnosis II **Credits: 2**
- PAS 761 - Diagnostics II - EKG **Credits: 2**
- PAS 771 - Applied Pathophysiology II **Credits: 2**
- PAS 781 - Clinical Medicine II **Credits: 6**
- PAS 791 - Pharmacology II **Credits: 2**

Fall 1 (21)

- PAS 722 - Clinical Geriatrics **Credits: 2**
- PAS 732 - Psychiatry & Behavioral Medicine **Credits: 2**

- PAS 742 - Clinical Procedures III **Credits: 2**
- PAS 752 - Physical Diagnosis III **Credits: 2**
- PAS 762 - Diagnostics III- Radiology **Credits: 2**
- PAS 772 - Applied Pathophysiology III **Credits: 2**
- PAS 782 - Clinical Medicine III **Credits: 7**
- PAS 792 - Pharmacology III **Credits: 2**

Clinical Courses (46 Credits)

CLINICAL ROTATIONS

Spring 2nd Year (12)

- PAS 800 - Family Medicine I - SCPE **Credits: 4**
- PAS 810 - Family Medicine II - SCPE **Credits: 4**
- PAS 820 - Internal Medicine - SCPE **Credits: 4**

Summer 2 (12)

- * PAS 830 - Emergency Medicine - SCPE **Credits: 4**
- * PAS 840 - Pediatric Medicine - SCPE **Credits: 4**
- * PAS 850 - Surgery - SCPE **Credits: 4**

Fall 2 (12)

- * PAS 860 - Behavioral Medicine - SCPE **Credits: 4**
- * PAS 870 - Women's Health - SCPE **Credits: 4**
- * PAS 890 - Geriatric Medicine - SCPE **Credits: 4**

Spring 3rd Year (10)

- * PAS 891 - Orthopedics - SCPE **Credits: 4**
- PAS 892 - Elective Experience I **Credits: 4**
- PAS 895 - Summative **Credits: 2**

Total Hours Required for Master's: 112

School of Human Sciences

Mindy Markham, School Director

301 Justin Hall
 785-532-5510
 Fax: 785-532-5505
humansci@k-state.edu

<https://www.hhs.k-state.edu/human-sciences/>

Overview

The School of Human Sciences is a multidisciplinary unit that provides graduate training for M.S. and Ph.D. students. The professional specializations are addressed to broad issues concerning individuals and families, and the courses are taught by a faculty of educators, prevention scientists, health specialists, gerontologists, and couple and family therapists.

Extensive research and professional practice opportunities are provided through The Family Center and Center for Child Development. Opportunities are also available through the university-wide Center on Aging and various community programs.

The school offers graduate work toward M.S. and Ph.D. degrees in a broad range of the human sciences and human services. The M.S. degree in human development and family science includes specializations in couple and family therapy, early childhood education, family and community services, and prevention science. The school also offers an M.S. in gerontology. The school offers the following specializations leading to the Ph.D. degree in health and human sciences: couple and family therapy and prevention science in HDFS. Also available in the department are certificates in conflict resolution, gerontology, and human services administration.

Online programs

The school collaborates with the Innovative Digital Education Alliance (IDEA) Innovative Digital Education Alliance (IDEA) to offer the M.S. degree in human development and family science with a specialization in family and community services. The inter-institutional M.S. programs draw upon the expertise of graduate faculty from six universities. The program is taught fully online. Students enrolled in the program through Kansas State University will receive their degrees from Kansas State University.

Additionally, the M.S. degree in human development and family science with a specialization in early childhood education, the M.S. in gerontology, and the graduate certificates in conflict resolution, gerontology, and human services administration are all offered as online only programs.

Accelerated

Accelerated Human Development and Family Science (BS)/Human Development and Family Science - Prevention Science (MS)

The accelerated Accelerated Human Development and Family Science (BS)/Human Development and Family Science - Prevention Science (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Human Development and Family Science - Prevention Science degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Human Development and Family Science - Prevention Science (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- CNRES 750 - Crises Across the Lifespan **Credits: 3**
- HDFS 752 - Social Justice Approach to Prevention in HDFS **Credits: 3**
- HDFS 770 - Development and Implementation of Prevention Science Programs **Credits: 3**
- HDFS 852 - Theories of Human Development and Family Science **Credits: 3**
- HDFS 860 - Family Policy **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Doctor of Philosophy

Health and Human Sciences - Couple and Family Therapy (PHD)

The School of Human Sciences participates in the Ph.D. degree program awarded from the College of Health and Human Sciences with a specialization in Couple and Family Therapy. The mission of our CFT doctoral program is to educate and mentor family scientist-practitioners with the most advanced, cutting edge research training, for the purpose of developing scholars prepared to make significant contributions in academic and clinical settings. Our goal is to develop distinguished scholars who are highly sought after due to their demonstrated competency as world-class researchers, excellent clinicians, clinical supervisors, and educators. Students pursue programs of study that include course work in human development, family studies, couple and family therapy, statistics, and research methods. The Ph.D. specialization in couple and family therapy is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

Students interested in this option with questions about program requirements or curriculum should contact:

Dr. Glade Topham
Doctoral Program Admissions Chair
Couple and Family Therapy
Department of Applied Human Services
139 Campus Creek Complex
Kansas State University
Manhattan, KS 66506

(785) 532-6245
gtopham@ksu.edu

Students interested in this option with questions about admission should contact:

CFT Graduate Program Admissions Coordinator
Department of Applied Human Services
301C Justin Hall
Kansas State University
Manhattan, KS 66506
ljrausch@ksu.edu

Admission Requirements

This curriculum for the Ph.D. in CFT follows COAMFTE guidelines. It assumes students have completed the requirements for the COAMFTE Master's-Level Standard Curriculum. Where that is not the case, students must complete the equivalent of any deficiencies. Most students complete the program in four years. Students have seven years to complete the program. A minimum of 90 credits is required. Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

No GRE requirement for admission.

Course Requirements

Assessment and Treatment in Couple and Family Therapy (3 hours)

- CFT 970 - Specialization and Leadership Credits: 3

Family Studies and Human Services (3 hours)

- HDFS 950 - Theory Construction in Human Development and Family Science Credits: 3

Supervision of CFT (12-18 hours)

- CFT 984 - Supervision of Couple and Family Therapy Credits: 3
- CFT 986 - Practicum in Supervision in Couple and Family Therapy Credits: 1-3
(9-15 hours required)

Research Methods (28 hours)

- CFT 910 - Topics in Couple and Family Therapy Credits: 1-3
(3 hours required)
- CFT 983 - Advanced Family Research Methods Credits: 3
- HDFS 809 - Qualitative Research Methods in Human Development and Family Science Credits: 3
- HDFS 906 - Statistical Methods in Family Studies and Human Sciences II Credits: 3

Supervised Clinical Practice (3-9 hours)

- CFT 985 - PhD Practicum in Couple and Family Therapy **Credits: 1-3**
(3 hours minimum)

Additional Learning (9 hours)

- Electives **Credits: 9**
- Take additional electives hours as needed to reach the required 90 credit minimum.

End-of-Program Requirements

- Accumulate 1000 approved clinical hours (including approved transfer hours)
 - Successfully defend your dissertation proposal seminar, write the dissertation, and successfully complete your oral defense of the dissertation
- AND**
- Successfully complete required CFT portfolio with at least two publications
- OR**
- Successfully complete the required CFT portfolio with less than two publications and complete written preliminary examinations and, if necessary, successfully defend them in the oral preliminary examination

Program Total Credits: 60

Master's degree Transfer Credits: 30

**Students who hold a master's degree may request transfer of up to 30 credit hours of that degree toward a Doctoral Degree*

Total Credit Hours Required for Doctorate: 90

Health and Human Sciences - Prevention Science in Human Development and Family Science (PHD)

The School of Human Sciences participates in the Ph.D. degree program awarded from the College of Health and Human Sciences with a specialization in Prevention Science in HDFS. The PhD program in Prevention Science in HDFS provides students with the skills to teach, conduct research, and practice in the field. Graduates will be prepared to conduct high-impact research addressing issues and needs relevant to individual, family and relationship health and well-being across the life course. Such research findings inform public policy, program development, and build the evidence base.

Admission Requirements

Course Requirements

Requirements: A minimum of 90 credit hours is required.

Required Courses: (24 credits)

- HDFS 752 - Social Justice Approach to Prevention in HDFS **Credits: 3**

- HDFS 770 - Development and Implementation of Prevention Science Programs **Credits: 3**
- HDFS 787 - Resilience in Families **Credits: 3**
- HDFS 852 - Theories of Human Development and Family Science **Credits: 3**
- HDFS 860 - Family Policy **Credits: 3**
- HDFS 893 - Evaluation of Prevention Science Programs **Credits: 3**
- HDFS 950 - Theory Construction in Human Development and Family Science **Credits: 3**
- HHS 995 - Grant Writing and Management **Credits: 3**

Statistics and Research Methods:

Statistics: 9 credits

One of the Following:

- HDFS 806 - Statistical Methods in Human Development and Family Science I **Credits: 3**
- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**

And one of the following:

- HDFS 906 - Statistical Methods in Family Studies and Human Sciences II **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

And one of the following:

- CFT 910 - Topics in Couple and Family Therapy **Credits: 1-3**
- STAT 730 - Multivariate Statistical Methods **Credits: 3**

Research Methods: 9 credits

- CFT 983 - Advanced Family Research Methods **Credits: 3**
- HDFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**
- HHS 888 - Foundations in Research Methodology **Credits: 3**

Professional Development: Minimum 14 credits

- CFT 970 - Specialization and Leadership **Credits: 3**
- EDCI 943 - Principles of College Teaching **Credits: 3**
- HDFS 981 - Applied Practicum in HDFS **Credits: 1-3** (Can be repeated for elective credit)
- HDFS 982 - College Teaching Practicum in HDFS **Credits: 1-3** (Can be repeated for elective credit)
- HDFS 983 - Research Practicum in HDFS **Credits: 1-3** (Can be repeated for elective credit)

Electives: 15 credits

These 15 credits of electives should be based on student's professional goals and must be approved by the student's supervisory committee.

Doctoral Research: 19 credits

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Conflict Resolution Graduate Certificate

Contact: Brett Mallon

E-mail: bmallon@ksu.edu

Home Page: <https://online.k-state.edu/programs/certificates/graduate-certificates/conflict-resolution.html>

Offered through the School of Human Sciences, the Graduate Certificate in Conflict Resolution provides students with the fundamentals of conflict resolution and practice. It is intended to meet the needs of those individuals who seek introductory graduate training in conflict resolution. It may also be appropriate for professionals who have already earned a graduate degree in their professional field, but who would benefit from academic study of applications of conflict analysis and resolution in their current profession.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Human Development and Family Science – Prevention Science at Kansas State University.

Course Requirements

Required Courses

To complete the Conflict Resolution Graduate Certificate Program you must complete four, three-credit-hour courses.

- CNRES 751 - Interpersonal Conflict Skills and Strategies **Credits: 3**
- CNRES 752 - Culture and Conflict **Credits: 3**
- CNRES 753 - Violence Prevention and Intervention **Credits: 3**
- CNRES 754 - Organizational Conflict **Credits: 3**
- CNRES 755 - Family Mediation **Credits: 3**
- CNRES 758 - Applied Alternative Dispute Resolution **Credits: 3**
- CNRES 759 - Foundations of Trauma and Traumatic Stress **Credits: 3**
- CNRES 761 - International Conflict & Trauma **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Gerontology Graduate Certificate

The 15-credit hour online Graduate Certificate in Gerontology is a flexible and customizable curriculum designed to provide students with the cutting-edge gerontological skills needed to enhance their degree or propel advancement in their field. Innovative courses taught by a diverse faculty engage students in a variety of topics such as health and well-being, advocacy, emerging critical issues, and community-based interventions.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Gerontology at Kansas State University.

Course Requirements

The graduate certificate program consists of 15-credit hours of coursework, including core courses (6 credit hours) and electives (9 credit hours).

Required Courses

6 credit hours

- GERON 772 - Adult Development and Aging **Credits: 3**
- GERON 775 - Advanced Diversity in the Aging Experience **Credits: 3**

Elective Courses

Students may choose from any of the following elective courses and/or take courses from outside of this list based upon their professional goals. Electives outside of this list must be approved by the gerontology graduate program director. Only up to 3-credit hours of practicum experience may be included in the certificate program. 9 credit hours

- GERON 605 - Practicum in Gerontology **Credits: 1-3**
- GERON 610 - Seminar in Long-Term Care Administration **Credits: 3**
- GERON 620 - Independent Study in Gerontology **Credits: 1-3**
- GERON 625 - Advanced Physical Health & Well-Being of Older Adults **Credits: 3**
- GERON 630 - Advanced Mental Health & Aging **Credits: 3**
- GERON 725 - Advanced Topics in Gerontology **Credits: 1-3**
- GERON 730 - Advanced Sexuality & Aging **Credits: 3**
- GERON 740 - Advanced Creativity & Aging **Credits: 3**
- GERON 774 - Advanced Environments & Aging **Credits: 3**
- GERON 776 - Advanced Program Design, Implementation, & Evaluation in Gerontology **Credits: 3**
- GERON 777 - Advanced Policy & Advocacy in Gerontology **Credits: 3**
- GERON 778 - Advanced Aging Family Dynamics & Caregiving **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Human Services Administration Graduate Certificate

Contact: Alisha Hardman

E-mail: ahardman@k-state.edu

Home Page: <https://online.k-state.edu/programs/certificates/graduate-certificates/human-services-administration.html>

Offered through the School of Human Sciences, the Graduate Certificate in Human Services Administration provides students the skills and competencies needed to develop, implement, evaluate, and administer programs designed to enhance family and relationship health and well-being within non-profit or public settings. It is intended to meet the needs of individuals who seek introductory graduate training as well as those who have already earned a graduate degree, but who would benefit from academic study of human services administration in their current profession.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Human Development and Family Science – Prevention Science or Master of Human Development and Family Science – Family and Community Services at Kansas State University

Course Requirements

Required Courses

- HDFS 801 - Grant Development and Management **Credits: 3**
- HDFS 860 - Family Policy **Credits: 3**
- HDFS 770 - Development and Implementation of Prevention Science Programs **Credits: 3**
OR
- HDFS 719 - Program Administration and Management **Credits: 3**
- HDFS 893 - Evaluation of Prevention Science Programs **Credits: 3**
OR
- HDFS 714 - Program Design, Evaluation, and Implementation **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Youth Development Professional Graduate Certificate

(available through distance education only)

Contact: Elaine Johannes
E-mail: ejohanne@ksu.edu

Offered through the School of Human Sciences graduate program, the objective of the youth development professional certificate is to train graduates to understand and apply conceptual approaches to youth development, to display an understanding of the development and impact of local, regional, state, federal, and global policies on youth as well as to recognize the impact of family and cultural influences on positive youth outcomes.

The certificate requires 12 credit hours chosen from a list of approved courses in addition to a one-hour foundations course.

The program is a collaborative, multi-institution effort with course work delivered online. Faculty from a partnership of seven land-grant universities share knowledge and expertise in youth development. All institutions are members of the Innovative Digital Education Alliance (IDEA) and have a history of success in online education.

Course Requirements:

- HDFS 711 - Foundations of Youth Development **Credits: 1**

Choose four of the following five courses (12 credits):

- HDFS 712 - Community Youth Development **Credits: 3**
- HDFS 713 - Adolescents and Their Families: Implications for Youth Professionals **Credits: 3**
- HDFS 717 - Youth Policy **Credits: 3**
- HDFS 720 - Youth Development **Credits: 3**
- HDFS 722 - Youth and Cultural Contexts **Credits: 3**

Master of Science

Gerontology (MS)

The online Master of Science in Gerontology prepares graduates to become practitioners, advocates, leaders, and changemakers in the field of aging. Innovative courses taught by a diverse faculty engage students in a variety of topics such as health and well-being, advocacy, emerging critical issues, and community-based interventions. This flexible and customizable curriculum is designed to meet the needs of students seeking professional preparation for career development or advancement in their field.

Course Requirements

The program requires 30 credit hours of coursework. Students will choose one of the following plans:

- A) Gerontology (15) + Electives (15)
- B) Gerontology (15) + Long-Term Care Administration (6) + Electives (9)

Most students who successfully complete the Long-Term Care Administration track will be eligible to sit for their specific state's administrator licensing exam.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

15 credit hours

- GERON 772 - Adult Development and Aging **Credits: 3**
- GERON 775 - Advanced Diversity in the Aging Experience **Credits: 3**
- GERON 777 - Advanced Policy & Advocacy in Gerontology **Credits: 3**
- GERON 799 - Professional Application in Gerontology **Credits: 1-3**
Select one of the following. 3 hours required. May take within the required hours or within the electives. No dual use of the hours as both a required and elective course. Course must be designated as required or elective.
- GERON 605 - Practicum in Gerontology **Credits: 1-3**
- GERON 620 - Independent Study in Gerontology **Credits: 1-3**

Long-Term Care Administration

6 credit hours

- GERON 610 - Seminar in Long-Term Care Administration **Credits: 3**
- GERON 615 - Long-Term Care Administration Internship **Credits: 1-9**

Elective Courses

9-15 credit hours

Students may choose from any of the following courses and/or choose electives outside of this list based upon their professional goals. Electives outside of this list must be approved by the student's master's committee.

- GERON 605 - Practicum in Gerontology **Credits: 1-3**

- GERON 610 - Seminar in Long-Term Care Administration Credits: 3
- GERON 620 - Independent Study in Gerontology Credits: 1-3
- GERON 625 - Advanced Physical Health & Well-Being of Older Adults Credits: 3
- GERON 630 - Advanced Mental Health & Aging Credits: 3
- GERON 711 - Advanced Death and Dying Credits: 3
- GERON 715 - Aging Veterans Credits: 3
- GERON 725 - Advanced Topics in Gerontology Credits: 1-3
- GERON 730 - Advanced Sexuality & Aging Credits: 3
- GERON 740 - Advanced Creativity & Aging Credits: 3
- GERON 774 - Advanced Environments & Aging Credits: 3
- GERON 776 - Advanced Program Design, Implementation, & Evaluation in Gerontology Credits: 3
- GERON 778 - Advanced Aging Family Dynamics & Caregiving Credits: 3

Total Hours Required for Master's: 30

Human Development and Family Science (MS)

The School of Human Sciences offers a Master of Science degree in Human Development and Family Science with specializations in couple and family therapy, early childhood education, prevention science, and family and community services.

Requirements - at least 30 credits are required to complete the Master's degree.

Human Development and Family Science - Couple and Family Therapy (MS)

The School of Human Sciences offers a Master of Science degree in Human Development and Family Science with a specialization in couple and family therapy. The couple and family therapy M.S. specialization prepares professionals to conduct and evaluate therapy with couple and family groups. Students pursue programs of study that include course work in human development, family studies, couple and family therapy, and research methods. The M.S. specialization in couple and family therapy is accredited by the Commission on Accreditation for Marriage and Family Therapy Education.

Students interested in this option with questions about program requirements or curriculum should contact:

Dr. Glade Topham
 Master's Program Admissions Chair
 Couple and Family Therapy
 Department of Applied Human Sciences
 139 Campus Creek Complex
 Kansas State University
 Manhattan, KS 66506
 (785) 532-6245
gtopham@ksu.edu

Students interested in this option with questions about admissions should contact:

CFT Graduate Program Admissions Coordinator
 Department of Applied Human Sciences
 301C Justin Hall
 Kansas State University
 Manhattan, KS 66506
ljrausch@ksu.edu

Admission Requirements

Course Requirements

The M.S. degree in Couple and Family Therapy requires 60 semester hours of graduate work. Most students complete the program in three years. Students have up to five years to complete the program.

The coursework only option for this program does not require a culminating experience.

Required Courses

- Theoretical Foundations of Couple and Family Therapy
 - CFT 853 - Family Systems in Cultural Context **Credits: 3**
 - CFT 864 - Clinical Theory and Practice A **Credits: 3**
 - CFT 867 - Pre-Practicum in Couple and Family Therapy **Credits: 3**
 - CFT 896 - Clinical Theory and Practice B **Credits: 3**
- Assessment and Treatment in Couple and Family Therapy
 - CFT 869 - Systematic Treatment of Trauma Violence and Substance Abuse **Credits: 3**
 - CFT 870 - Couples and Sex Therapy **Credits: 3**
 - CFT 872 - Family Therapy **Credits: 3**
 - CFT 879 - Systemic Assessment and Treatment of Psychopathology **Credits: 3**
 - CFT 886 - Clinical Intervention with Parents and Children **Credits: 3**
- Family Studies and Human Services
 - CFT 824 - Parent-Child Interaction: Theory and Research **Credits: 3**
 - CFT 865 - Human Sexuality **Credits: 3**
- Ethics and Professional Studies
 - CFT 878 - Professional Studies in Family Therapy **Credits: 3**
- Research Methodology
 - HDFS 888 - Research Methods in Human Development and Family Science **Credits: 3**
- Choose one of the following courses:**
 - HDFS 806 - Statistical Methods in Human Development and Family Science I **Credits: 3**
 - HDFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**
 - HDFS 893 - Evaluation of Prevention Science Programs **Credits: 3**
- Supervised Clinical Practice
 - A minimum of 12 credit hours of Practica (CFT 885); must accumulate 500 client contact hours and 100 hours of supervision.
 - CFT 885 - Practicum in Couple and Family Therapy **Credits: 1-3**

Elective Courses

Students who choose to complete the clinical project (See below) are required to complete 3 elective credit hours.

Thesis Option Courses

1. Pass a comprehensive written examination on couple and family therapy
2. Complete, with committee approval, a thesis (requiring 6 hours of CFT 899)
3. Pass an oral examination with emphasis on the written document

- CFT 899 - MS Research in Couple and Family Therapy Credits: 1-6 (6)

Clinical Project Option

1. Pass a comprehensive written examination on couple and family therapy
 2. Complete, with committee approval, a Clinical Project (requiring 3 hours of CFT 889 plus 3 elective credit hours)
 3. Pass an oral examination with emphasis on the written document
- CFT 889 - Clinical Project Credits: 1-3 (3)

Total Hours Required for Master's: 60

Human Development and Family Science - Early Childhood Education (MS)

The School of Human Sciences offers a Master of Science degree in Human Development and Family Science with a specialization in early childhood education. The M.S. program in early childhood education prepares individuals to be master teachers, directors of early childhood programs, and leaders in the development of childcare policy.

Students interested in this option with questions about program requirements or curriculum should contact:

Dr. Mary DeLuccie
Program Chair
Early Childhood Education

Department of Applied Human Sciences
303 Justin Hall
Kansas State University
Manhattan, KS 66506
deluccie@ksu.edu

Admission Requirements

The candidate must select his/her major professor and one other member of his/her committee from the Early Childhood Education area. The committee will be responsible for the development of a course of study with the candidate and for approving a choice of practicum and the preparation of the written report.

The academic performance of the student in the Early Childhood Education specialization will be reviewed by the student's committee after he/she has completed at least twelve (12) hours of graduate study.

Students considering the thesis option should enroll in additional research and/or statistics courses in consultation with their major professor.

Course Requirements

To complete the program, the master's candidate must have:

1. Thirty (30) graduate hours of coursework approved by their committee.
2. Experience working with children. The candidate can fulfill this requirement with coursework in one of the following:
 - Practicum in Early Childhood Education (ECED 883). Enrollment for 3 credits is required.
 - Practicum in Parent Education (ECED 884). Enrollment for 3 credits is required.
 - Practicum in Human Development Research (LSHD 892). Enrollment for 3 credits is required.

- Research in FSHS (Thesis or Report or Article) (ECED 899). Enrollment for 2 credits (Report or Article) for 6 credits (Thesis) is required.
- 3. A comprehensive examination *or* a written document which may take one of three forms:
 - a. Thesis - an empirical study with a comprehensive review of the literature and conforming to specifications set by the university. Enrollment in ECED 899 for 6 credits is required.
 - b. An article prepared for submission to a scholarly journal (research or expository). Enrollment in ECED 899 for 2 credits is required.
 - c. Report, e.g., curriculum teacher guide, survey, parent handbook, assessment instruments. Enrollment in ECED 899 for 2 credits is required.
- 4. The candidate must have an oral defense of the document or of the comprehensive examination.

Required Courses

- ECED 810 - Child Development **Credits: 3**
- ECED 815 - Infant Behavior and Development **Credits: 3**
- ECED 820 - Theories of Human Development **Credits: 3**
- ECED 830 - Advanced Program Development **Credits: 3**
- HDFS 850 - Family Science **Credits: 3**
- or
- HDFS 852 - Theories of Human Development and Family Science **Credits: 3**
- or
- HDFS 670 - Working with Parents **Credits: 3**
- HDFS 888 - Research Methods in Human Development and Family Science **Credits: 3**
- or
- EDCEP 816 - Research Methods in Education **Credits: 3**

Elective Courses

- ECED 710 - Child Care: Components and Issues **Credits: 3**
- ECED 728 - Assessment of Young Children **Credits: 3**
- ECED 730 - Early Childhood Program Administration **Credits: 3**
- ECED 740 - Play Facilitation **Credits: 3**
- ECED 883 - Practicum in Early Childhood Education **Credits: 1-18**
- ECED 884 - Practicum in Parent Education **Credits: 1-18**
- HDFS 899 - MS Research in Human Development and Family Science **Credits: 1-8**
- HDFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**

Thesis Option Courses

Thesis - an empirical study with a comprehensive review of the literature and conforming to specifications set by the university. Enrollment in ECED 899 for 6 credits is required.

- ECED 899 - MS Research in Early Childhood Education **Credits: 1-6 (6)**

Report Option Courses

- 1. An article prepared for submission to a scholarly journal (research or expository). Enrollment in ECED 899 for 2 credits is required.

2. Report, e.g., curriculum teacher guide, survey, parent handbook, assessment instruments. Enrollment in ECED 899 for 2 credits is required.
- ECED 899 - MS Research in Early Childhood Education **Credits: 1-6 (2)**

Total Hours Required for Master's: 30

Human Development and Family Science - Family and Community Services (MS)

The Family and Community Services Master's degree program, is offered as an inter-institutional online program sponsored by the Innovative Digital Education Alliance (IDEA). This program equips professionals to help families and communities thrive in today's world. This degree prepares students to manage programs and deliver quality services, as well as understand family and community dynamics and human development across the lifespan.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

30 credit hours

The following courses are required for all Family and Community Services Students at all GPIDEA Campuses:

- CNRES 750 - Crises Across the Lifespan **Credits: 3**
- HDFS 714 - Program Design, Evaluation, and Implementation **Credits: 3**
- HDFS 719 - Program Administration and Management **Credits: 3**
- HDFS 784 - Foundations and Principles of Family and Community Services **Credits: 3**
- HDFS 785 - Family Dynamics **Credits: 3**
- HDFS 786 - Lifespan Development **Credits: 3**
- HDFS 787 - Resilience in Families **Credits: 3**
- HDFS 791 - Parenting Education **Credits: 3**
- HDFS 825 - Family Resource Management **Credits: 3**
- HDFS 862 - Interpersonal Relationships **Credits: 3**

Elective Courses

Select one course

- CNRES 759 - Foundations of Trauma and Traumatic Stress **Credits: 3**
- HDFS 700 - Problems in Human Development and Family Science **Credits: 1-6**
- HDFS 708 - Topics in Human Development and Family Science **Credits: 2-3**
- HDFS 724 - Working with Military Families **Credits: 3**
- HDFS 770 - Development and Implementation of Prevention Science Programs **Credits: 3**
- HDFS 899 - MS Research in Human Development and Family Science **Credits: 1-8**

Capstone Courses

Select one

- HDFFS 881 - Capstone in Human Development and Family Science **Credits:** 1-6
- PFP 675 - Field Study in Family Economics **Credits:** 1-3

Practica

Practica not required, but the courses below will support capstone experiences as determined by the student and committee.

- HDFFS 700 - Problems in Human Development and Family Science **Credits:** 1-6
- HDFFS 708 - Topics in Human Development and Family Science **Credits:** 2-3
- HDFFS 881 - Capstone in Human Development and Family Science **Credits:** 1-6
- PFP 675 - Field Study in Family Economics **Credits:** 1-3

Total Hours Required for Master's: 36

Human Development and Family Science - Prevention Science (MS)

The School of Human Sciences offers a Master of Science degree in Human Development and Family Science with a specialization in Prevention Science. The M.S. program in Prevention Science trains students in applying research-based knowledge to the development, implementation, evaluation, and administration of prevention programs designed to promote individual, family, and relationship health and well-being across the life course. Students who choose the thesis option will also develop research skills to investigate phenomena within the field of human development and family science.

Requirements - at least 30 credits are required to complete the Master's degree in Prevention Science.

Admission Requirements

Students interested in this option with questions about admissions should contact:

Alisha Hardman, Ph.D.

Associate Professor & Graduate Program Coordinator

Human Development & Family Science

College of Health and Human Sciences

Kansas State University

316 Justin Hall

Manhattan, KS 66506

ahardman@k-state.edu

Course Requirements

Required Courses

- HDFFS 752 - Social Justice Approach to Prevention in HDFFS **Credits: 3**
OR
- CNRES 752 - Culture and Conflict **Credits: 3** (if on the Conflict Resolution track)
- HDFFS 770 - Development and Implementation of Prevention Science Programs **Credits: 3**
- HDFFS 787 - Resilience in Families **Credits: 3**
- HDFFS 800 - Introduction to Human Development and Family Science Graduate Program **Credits: 0**
- HDFFS 852 - Theories of Human Development and Family Science **Credits: 3**
- HDFFS 893 - Evaluation of Prevention Science Programs **Credits: 3**
- HHS 888 - Foundations in Research Methodology **Credits: 3**

Thesis Option Courses

12 credit hours

One of the following:

- EDCEP 817 - Statistical Methods in Education **Credits: 3**
 - HDFFS 806 - Statistical Methods in Human Development and Family Science I **Credits: 3**
 - HDFFS 809 - Qualitative Research Methods in Human Development and Family Science **Credits: 3**
 - STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
- AND**
- HDFFS 899 - MS Research in Human Development and Family Science **Credits: 1-8** (6 hours required)
 - Elective **Credits: 3**

Coursework Only Option Courses

12 credit hours

The coursework only option for this program does not require a culminating experience.

Program Administration and Policy Track

- HDFFS 801 - Grant Development and Management **Credits: 3**
- HDFFS 860 - Family Policy **Credits: 3**
- HDFFS 881 - Capstone in Human Development and Family Science **Credits: 1-6** (3 hours required)
- Elective **Credits: 3**

Conflict Resolution Track

- CNRES 751 - Interpersonal Conflict Skills and Strategies **Credits: 3**
- CNRES 753 - Violence Prevention and Intervention **Credits: 3**
- CNRES 755 - Family Mediation **Credits: 3**
- HDFFS 881 - Capstone in Human Development and Family Science **Credits: 1-6** (3 hours required)

Trauma Studies Track

- CNRES 750 - Crises Across the Lifespan **Credits: 3**
- CNRES 753 - Violence Prevention and Intervention **Credits: 3**
- CNRES 759 - Foundations of Trauma and Traumatic Stress **Credits: 3**
- HDFS 881 - Capstone in Human Development and Family Science **Credits: 1-6** (3 hours required)

Total Hours Required for Master's: 30

Human Development and Family Science - Youth Development (MS)

The School of Human Sciences offers a Master of Science degree in Human Development and Family Science with a specialization in youth development. The collaborative, multi-institutional master's degree program in Youth Development draws on the expertise of graduate faculty and graduate courses from six land-grant universities. Faculty at these institutions share knowledge and expertise in youth development, delivering most instruction over the internet. All institutions are members of the Innovative Digital Education Alliance (IDEA) and have a history of success in distance education.

Students interested in this option with questions about program requirements or curriculum should contact:

Elaine Johannes, PhD

Human Development and Family Science

College of Health and Human Sciences

318 Justin Hall

Kansas State University

Manhattan, KS 66506

ejohanne@ksu.edu

Course Requirements

The graduate program consists of 36 credit hours, including 10 required courses equaling 28 credit hours and 8 elective hours. The courses are offered on a rotating basis, with all courses offered at least once every other year (i.e., fall, spring, and summer).

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses

Core courses offered within the program include nine courses (3 credit hours each) and a professional development seminar (1 credit hour):

- HDFS 711 - Foundations of Youth Development **Credits: 1**
- HDFS 712 - Community Youth Development **Credits: 3**
- HDFS 713 - Adolescents and Their Families: Implications for Youth Professionals **Credits: 3**
- HDFS 716 - Topics in Contemporary Youth Issues **Credits: 1-3**
- HDFS 717 - Youth Policy **Credits: 3**
- HDFS 718 - Youth Professionals as Consumers of Research **Credits: 3**
- HDFS 719 - Program Administration and Management **Credits: 3**
- HDFS 720 - Youth Development **Credits: 3**
- HDFS 722 - Youth and Cultural Contexts **Credits: 3**

Elective Courses

8 credit hours

The eight elective hours will consist of a practicum (1-3 credits), independent study (1-3 credits), or coursework. Practicum and independent study project hours will be coordinated with the major professor.

Total Hours Required for Master's: 36

College of Technology and Aviation (Salina Campus)

Alysia Starkey, CEO and Dean

Terri Gaeddert, Associate Dean for Academics

Michael Pritchard, Associate Dean of Research and Graduate Studies

Kyle Chamberlin, Associate Dean for Academic Success and Student Affairs

Deb Mareline, Assistant Dean

Kansas State University Salina
Aerospace and Technology Campus
2310 Centennial Road
Kansas State University
Salina, KS 67401-8196

785-289-2650
salinaadmissions@k-state.edu
<https://www.salina.k-state.edu/>

Mission Statement

Kansas State University Salina's mission is to advance innovation and foster talent development in aerospace and technology.

Vision Statement

Kansas State University Salina will lead the nation as a next-generation land-grant university - setting the standard as the most technically progressive institution for developing talent in the aerospace and technology industries and inspiring the learning, creativity, discovery and engagement that positively impacts society and transforms lives in Kansas and around the world.

Aviation

Tysen Pina, Head

Kansas State University Salina
Aerospace and Technology Campus
2310 Centennial Road
Salina, KS 67401-8196

785-289-2650
salinaadmissions@k-state.edu
https://www.salina.k-state.edu

Accelerated

Accelerated Aeronautical Technology - Professional Pilot (BS)/Aeronautics (MS)

The accelerated Accelerated Aeronautical Technology - Professional Pilot (BS)/Aeronautics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Aeronautics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

**Admission Requirements for an ADP*

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Aeronautics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 707 - Research Methods **Credits: 3**
- COT 701 - Advanced Technical Communication **Credits: 3**

Graduation Requirements

**The Graduation Requirements below must be listed in the ADP Curriculum proposal*

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Graduate Certificate

Aerospace Certification Graduate Certificate

The Graduate Certificate in Aerospace Certification (GCAC) is designed to provide post-baccalaureate students employed in the aviation/aerospace industry, the requisite knowledge required to fulfill various professional roles within companies and organizations that span the industry. These include Aerospace Original Equipment Manufacturers (OEMs otherwise known as Tier I suppliers), Aerospace industry Tier II and Tier III suppliers, Aircraft Maintenance Repair and Overhaul Facilities (MROs), and other organizations. This certificate will provide these professionals a basic and intermediate level of understanding of the FAA's product certification processes and continued airworthiness certification process along with supplemental certification processes and other regulatory requirements associated with bringing products to market in this industry. This knowledge is increasingly important as the industry moves to integrate novel technologies into the National Airspace System (NAS) such as Advanced Air Mobility (AAM) given the rapid rate of retirement of professionals with this level of knowledge.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Aeronautics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 722 - Aircraft Type Certification **Credits: 3**
- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 841 - Aerospace Safety Management Systems (SMS) **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Aerospace Cyber Operations Graduate Certificate

The graduate certificate program in UAS- Information Assurance is designed to provide both working professionals and graduate students a strong educational foundation and career potential in an increasingly important industry to both civilian and military organizations all over the United States. The market for Information Assurance jobs remains bright. The primary emphasis of the graduate certificate program is to prepare the workforce to understand the protection of UASs from cyber-attacks by negligent and hostile means and teaching Information Assurance risk assessment principles to practitioners involved with UAS operations on land, sea, air, or satellite platforms.

The program will be offered via K-State Online or face-to-face at K-State Polytechnic in eight-week segments in fall, spring, and summer semesters to meet the needs of both on-campus and off-campus learners. Courses are delivered using a course management system to provide an interactive, web-based classroom to students. Thus, the delivery of the certificate provides for occupational work demands and schedules. The Graduate Certificate in UAS – Information Assurance may be completed in one year. Two courses each in the fall and spring semesters and one course in the summer semester.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Course Requirements

Required Courses

- CYBR 680 - Cyber Systems and Risk Analysis **Credits: 3**
- CYBR 682 - Open Source Cyber Surveillance **Credits: 3**
- CYBR 684 - Advanced Topics in Cyber Data Fusion **Credits: 3**
- CYBR 686 - Risk Management for Cyber Operations **Credits: 3**
- CYBR 688 - Sense and Avoid Technologies in Aerospace Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Aerospace Safety Graduate Certificate

The Graduate Certificate in Aerospace (GCA) is designed to provide post-baccalaureate students employed in the aviation/aerospace industry, the requisite knowledge required to fulfill an organizational safety role for their employer in fulfillment of the recent FAA move to implement SMS (Safety Management Systems) system-wide in an effort to increase system safety levels. This knowledge is increasingly important as the industry moves to integrate novel technologies into the National Airspace System (NAS) such as Advanced Air Mobility (AAM).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Aeronautics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 790 - Aerospace Topics **Credits: 3**
- AVT 841 - Aerospace Safety Management Systems (SMS) **Credits: 3**
- COT 701 - Advanced Technical Communication **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Master of Science

Aeronautics (MS)

The Master of Science in Aviation degree is a 30 credit with 2-option degree that is designed to meet emerging needs of the aviation/aerospace industry. Further, each option has either a research thesis track for those who desire to continue their education to the Ph.D. or a non-thesis option for those who do not plan on continuing their education beyond the master's degree. The M.S. in Aeronautics is also designed to accommodate either the working professional or the traditional academic student with both distance and hybrid instruction models. In either option, students will learn both from experienced professors as well as from experienced industry professionals.

The Leadership/Policy option is aimed at those who wish to continue their professional education with an ultimate career objective of an executive leadership position in the aviation/aerospace sector. Within this option, students will examine and understand current industry issues from a strategic perspective with a focus on how to make the industry more resilient in an era of constrained resources and changing national priorities.

The Aerospace Certification option is designed for those who desire advancement in, or desire to enter the workforce in, either the aerospace manufacturing or continued airworthiness sectors. Students will experience in-depth study in the areas of airworthiness certification, production certification, lean six sigma, project management, safety management and others. This program will meet and exceed emerging industry standards for education and training in airworthiness certification.

Admission Requirements

As specified in the Graduate Handbook. Students with undergraduate backgrounds other than aviation or engineering will be admitted conditionally at the discretion of the admissions committee.

A 3.0 undergraduate G.P.A. on a 4.0 scale during the last 60 hours of coursework is required for admission.

Other material required for admission: Official undergraduate transcripts, 2 letters of recommendation and a letter expressing personal goals in the completion of this program.

Graduation Requirements

30 credit hours.

Course Requirements

The program of study for the MSA program requires 30 total credits to include the following:

Required courses for both options: 6 credit hours

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 707 - Research Methods **Credits: 3**

Aerospace Certification Option: 15 credit hours

- AVT 703 - Project Management for Aerospace Professionals **Credits: 3**
- AVT 722 - Aircraft Type Certification **Credits: 3**
- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 744 - Aviation Human Factors Analysis and Design **Credits: 3**
- AVT 841 - Aerospace Safety Management Systems (SMS) **Credits: 3**
- Technical Elective **Credits: 3**

Aerospace Leadership/Policy Option: 15 credit hours

- COT 704 - Managerial Finances, Metrics, and Analytics **Credits: 3**
- AVT 751 - Aerospace Policy **Credits: 3**
- AVT 771 - Leadership in the Aerospace Sector **Credits: 3**
- Technical Elective **Credits: 3**
- Technical Elective **Credits: 3**
- Technical Elective **Credits: 3**

Technical Electives

- AVT 703 - Project Management for Aerospace Professionals **Credits: 3**
- AVT 722 - Aircraft Type Certification **Credits: 3**
- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 744 - Aviation Human Factors Analysis and Design **Credits: 3**
- AVT 751 - Aerospace Policy **Credits: 3**
- AVT 790 - Aerospace Topics **Credits: 3**
- AVT 799 - Advanced Topics in Aeronautics **Credits: 3**
- COT 704 - Managerial Finances, Metrics, and Analytics **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**

Research: 3 credit hours

At least 3 credits from:

- AVT 838 - MSA Thesis **Credits: 1-6**
OR
- AVT 836 - Master of Science in Aeronautics Capstone Project **Credits: 3** (non-thesis students)*

*Non-thesis students will need to enroll in one additional elective to reach 30 total hours.

No more than 9 credits of 600 level courses can be taken. Other technical courses may be substituted upon approval.
(15 credits)

Total Hours Required for Master's: 30

Aviation Maintenance

AVM 101 - Introduction to Aircraft Materials and Tooling Standards

Credits 2

Skills and techniques essential to understanding aircraft material properties and fabrication techniques. Emphasizes knowledge and practical experiences involving: shop safety, organization and human factors associated with shop practices, basic aircraft structural materials and hardware familiarization, fluid lines and fittings, hand tool selection and use, and aviation-specific dimensional inspection tools and techniques, aircraft hardware identification and applications, cleaning and corrosion control, aircraft metal selection an applications, and aircraft material inspection fundamentals.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVM 102 - Aviation Regulations, Compliance and Operations

Credits 2

A review of the role and organizational structure of the Federal Aviation Administration (FAA) as it relates to the certification and continued airworthiness of aircraft and its operation in general, business, and commercial aviation environments. Emphasis on the privileges and limitations of certificated personnel who maintain aircraft systems in the context of the FAA regulations. Includes practical applications of aircraft weight and balance, effective completion of maintenance record entries, accurate use of graphs and charts to determine critical performance values, and the servicing, starting, ground operations, and security of aircraft. Students demonstrate the ability to read, comprehend, and apply information contained in FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material.

Note

Two hours lecture

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

K-State 8

Empirical and Quantitative Reasoning

AVM 103 - Intro to Aircraft Materials and Tooling Standards Laboratory

Credits 1

A laboratory course to supplement the material of AVM 101.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 101

Typically Offered

Fall, Summer

AVM 111 - Basic Aircraft Electricity**Credits 4**

A basic concept of DC/AC circuits, with basic laws relating to the following: measuring voltage, current, resistance, continuity and leakage; relationship of voltage, current and resistance in electrical circuits; reading and interpretation of electrical circuit diagrams; electrical devices and inspection and servicing of batteries. Introduction to digital numbering systems and digital logic functions.

Note

Three hours lecture and two hour lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 112 - Aircraft Welding**Credits 2**

Theory and skill development in aircraft welding processes. Exercises in gas welding processes as applied to ferrous and nonferrous materials. Oxygen/acetylene, inert gas, and resistance welding processes are to be studied.

Note

One hour recitation and three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Natural and Physical Sciences

AVM 121 - Aircraft Drawings**Credits 2**

Students learn how to read, understand, and interpret aircraft drawings commonly found in the aviation maintenance industry. Recognition and identification of drawing lines and symbols, and the meaning of these is covered.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Aesthetic Interpretation

K-State 8 Tag 2

Empirical and Quantitative Reasoning

AVM 131 - Aircraft Standards**Credits 4**

A survey of the organization of the Federal Aviation Administration. Emphasis will be placed on regulations, standards, specifications, procedures and the practice of using charts, graphs and drawings. Also included are the introduction to air transport maintenance procedures, weight and balance procedures, aircraft ground operations and the introduction to flight training to include several flights.

Note

Flight lab fees required.

Two hours lecture and six hours of lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 132 - Aircraft Fluid Power**Credits 3**

A study of basic fluid mechanics as it applies to practical applications in aircraft systems. Compressible and incompressible fluid systems will be studied.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 141 - Aircraft Science**Credits 3**

This is a study of basic physics as required by aircraft technicians and defined by FAR 147. Use and understand the principles of simple machines, sound, fluid, and heat dynamics, basic aerodynamics, aircraft structures, and theory of flight.

Note

Three hours recitation and two hours of lab per week.

Repeat for Credit

N

Requisites

Corequisite: Math 100

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 142 - Airframe Systems**Credits 4**

A study of the airframe systems and components to include: pressurization, heating and cooling, and structural device.

Note

Two hours lecture and six hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 151 - Aviation Maintenance Fundamentals**Credits 3**

This course is designed to permit the student to learn and practice those skills and techniques essential to the career development of the aviation maintenance technician. The subjects included are: shop safety, aircraft general familiarization, fluid lines and fittings, hand tools and measuring devices, aircraft hardware, cleaning and corrosion control, aircraft metals, inspection fundamentals, ground operation and servicing, and support equipment.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 152 - Airframe Structures and Repair**Credits 5**

A study of materials commonly used in airframe structures and the associated study of making structural repairs according to recommended procedures. Skills in sheet metal are stressed.

Note

Three hours recitation and six hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 162 - Airframe Electrical Systems**Credits 4**

An advanced study of DC/AC circuits law relating to circuit analysis and a detailed study of measuring instruments. Advanced study of relays, switches, alternators, and other devices encountered in circuit analysis, troubleshooting, and repair. Theory of operation and fault isolation on solid-state devices in aircraft circuitry. Inspection of aircraft electrical systems, including wire inspections and the types of repairs allowed, using appropriate technical manuals.

Note

Two hours lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111 or ECET 100.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 201 - Aircraft Metallic Primary Structures

Credits 3

A study of aircraft metal primary structures and materials commonly used in the design and construction of airframes including fuselages, wings, and control surfaces. Students gain theoretical knowledge and practical experience associated with the structural properties of materials used in the manufacturing process as well as the methods used to fabricate and repair those structures. Students practice structural metal repairs according to FAA approved data and manufacturer's recommended procedures. Skills in aluminum sheet metal fabrication and repairs are stressed.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 101 and AVM 103 or MET 121.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 203 - Aircraft Environmental and Fire Protection Systems

Credits 2

An in-depth study in small and large air vehicle environmental and fire detection and extinguishing systems. Emphasis on cabin pressurization and temperature climate control, supplemental oxygen, airframe and propulsion fire detection and extinguishing systems, crew visibility enhancement, and air toxicity detection. Students gain extensive practical experiences related to system design, operation, inspection, maintenance methodology, and fault analysis for both airframe and powerplant systems using manufacturer's technical instructions.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 204 - Aircraft Environmental and Fire Protection Systems Laboratory

Credits 1

A laboratory course to supplement the material of AVM 203.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 203

Typically Offered

Spring

AVM 205 - Aircraft Landing Gear and Fluid Power Systems

Credits 3

A study of the design and application of compressible and incompressible fluid power systems used in both simple and complex aircraft flight control, auxiliary, emergency, and landing gear systems. Emphasis on landing gear and deceleration systems to include components, structures, operation, and fault analysis of shock struts, position and warning, single and multiple disk brakes, anti-skid, wheel assemblies, retraction and extension systems and methods of emergency landing gear extension. Topics include landing gear door operation and sequencing. Students practice inspection, servicing, repair and troubleshooting of key fluid power and landing gear systems necessary to ensure continued airworthiness of these systems.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 207 - Aircraft Electrical Systems

Credits 3

A review and advanced study of DC/AC circuits, and laws relating to circuit analysis and a detailed study of measuring instruments applied to aircraft. Study of relays, switches, alternators, and other devices encountered in circuit analysis, troubleshooting, and repair. Theory of operation and fault isolation on solid-state devices in aircraft circuitry. Inspection of aircraft electrical systems, including wire inspections and the types of repairs allowed using appropriate technical manuals. A study of battery, magneto high and low tension ignition systems, including turbine igniters. Also a study of powerplant starting and charging systems and related components. Emphasis on effective fault diagnostics, repair, and timing of aircraft ignition systems.

Note

Two hours of lecture and 4 hours of lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or AVM 111.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 214 - Introduction to Aircraft Propulsion Theory, Design and Systems

Credits 3

A broad introductory study in the theory of operation of heat engines utilizing principles of the Otto and Brayton cycles found in aircraft reciprocating and gas turbine powerplants. Students gain a solid understanding of the basic principles of the construction, design, lubrication, cooling, and exhaust systems, including maintenance practices of reciprocating and gas turbine powerplants installed in aircraft. Thrust reverser operation of gas turbine engines is also included. The course has a practical component that includes the inspection, fault analysis, servicing and repair of key engines systems covered in the course.

Note

Three hours lecture and three hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 216 - Aircraft Propulsion Drive Systems**Credits 3**

A detailed study of aircraft propulsion drive systems that convert engine power to thrust necessary for sustained flight. Drive systems include propellers, and rotor-blades found on small, medium, and large fixed, and rotary-wing aircraft. Emphasis on fixed and controllable-pitch propellers applications as well as rotor-blades, and rotor-hubs assemblies found on helicopters. Topics include theory of operation, dynamic and static balancing, vibration analysis, design characteristics, materials, and maintenance practices. Students practice inspection, servicing, balance, maintenance and repair of propeller and rotor systems.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVM 231 - Aircraft Finish and Fabrication**Credits 3**

This course is designed to acquaint the student with the wood and fabric coverings and procedures used on aircraft, and methods used in preparation for and application of paint finishes to aircraft surfaces.

Note

One hour recitation and six hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 241 - Navigational Aids and Communication Systems**Credits 3**

A survey study of the aids to navigation and communications used in light and intermediate class aircraft. Operation and installation of the various types of equipment will be stressed.

Note

Two hour lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111 or ECET 100.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 261 - Aircraft Inspection and Assembly**Credits 5**

A study of assembly and manufacturing procedures and inspection of aircraft components. This course also covers in detail annual and 100-hour inspections.

Note

Three hours recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 121, 131.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 301 - Advanced Reciprocating Powerplant Technology**Credits 3**

A study in the theory, operation, construction, design, and maintenance of reciprocating powerplants installed in aircraft. Topics include the principles of the Otto cycle, reciprocating powerplant systems, and emerging trends in the design and application of reciprocating engines, including aviation diesel engines. Practical experiences include engine removal, installation, and troubleshooting to an airworthy standard, with an emphasis on disassembly and inspection of modern reciprocating engines found in single and twin-engine aircraft using visual, dimensional, and non-destructive techniques.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

None

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 303 - Introduction to Aircraft Composite Structures**Credits 3**

Introduces composite materials used in the design and production of legacy and modern aircraft. Topics include material characteristics, fabrication, and inspection; repair of non-metallic primary and secondary structures and materials using manufacturers' instructions. Materials include fabric, wood, fiberglass, plastics, honeycomb, and others. Students practice the selection, installation, application of protective coatings, and removal of special fasteners used in these structures. Laboratory exercises emphasize the fabrication and inspection of modern composite structures.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 304 - Aircraft Fuel Management and Metering Systems**Credits 3**

A comprehensive study of airframe and propulsion engine fuel systems associated with fuel storage, management, transfer and metering as applied to both reciprocating and turbine powered aircraft. Lecture topics include systems operation, maintenance methods, procedures and safety precautions associated with aircraft fueling and defueling for over-the-wing and pressure fueling systems. Fuel quantity, pressure and temperature indicating and warning systems, fuel dump, and detail reciprocating and turbine engine fuel metering systems including carburetor overhaul, electronic engine fuel controls (EEC and FADEC) are covered. Students practice the inspection, check, service, troubleshooting and repair of the various fuel systems found on board the aircraft to a level that assures continued airworthiness and safety.

Note

Two hours lecture and four hours of lab a week.

Repeat for Credit

N

Requisites

None

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 305 - Aircraft Avionics and Instrument Systems**Credits 3**

A study of flight instrument systems and navigation/communication electronic aids installed on aircraft. The course includes both lecture and practical applications of these systems to include operation, inspection, fault analysis and repair. The student will be exposed to mechanical and electronic airframe and powerplant indication equipment including flight instrument systems for heading, speed, altitude, temperature, pressure, RPM, and position indicating. The course includes flight management systems, and GPWS, TAWS, laser gyro and advanced Comm/Nav applications. Emphasis will be placed on NAV/COMM systems found in modern aircraft and associated antenna applications and installation methods. Pitot/Static instruments and systems are also discussed. Students practice inspection, service, fault analysis, installation and repair of these systems

Note

Three hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: ECET 100 or AVM 111.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 306 - Rotary and Fixed Wing Aircraft Design and Assembly**Credits 3**

A detailed study of the purpose of fixed-wing and rotary-wing aircraft designs and aerodynamic characteristics, their construction methods and assembly procedures. The course provides an insight critical maintenance tasks performed that impact the safe operation of the aircraft as well as exposure to the manufacture and assembly of aircraft. Students practice the rigging, assembly, jacking, weighing, and balancing of aircraft and flight control surfaces according to manufacturer's technical manuals; and making accurate record entries for tasks performed in accordance with FARs.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 101, AVM 121 or MET 111.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 312 - Aircraft Propellers**Credits 2**

A study of the use, maintenance, and inspection of propellers and their related control systems.

Note

One hour recitation and three hours lab a week.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVM 321 - Powerplant Fundamentals**Credits 4**

A study of the principles of operation, design features, and operating characteristics of reciprocating aircraft engines. Includes overhaul inspection procedures on current horizontal opposed and radial engines.

Note

Three hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 131.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

AVM 322 - Powerplant Operation and Troubleshooting

Credits 3

Experience in installation, operation, and removal of aircraft engines. Engine analysis and diagnosis of malfunctions, including methods of remedy, are performed on airworthy engines.

Note

Two hours recitation and four hours lab a week.

Repeat for Credit

N

Requisites

Corequisites: AVM 402 and AVM 301,

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 332 - Gas Turbine Powerplant

Credits 5

Advanced study of the fundamentals of gas turbine powerplants including operation, studies of supporting systems and inspection methods are fundamental to this course.

Note

Two hours recitation and nine hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 321.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 342 - Powerplant Induction and Fuel Systems**Credits 4**

A study of aircraft induction and fuel metering systems including fuels, carburetors, fuel injection systems, superchargers, and other induction system components used to ensure a dependable and accurate fuel supply at any flight configuration and attitude.

Note

Two hours recitation and six hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 321.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 351 - Powerplant Ignition and Electrical Systems**Credits 3**

A study of battery, magneto high and low tension ignition systems, including turbine igniters for today's aircraft. Also a study of powerplant starting and charging systems and related components. Emphasis will be placed on troubleshooting, repair, and timing of aircraft ignition systems.

Note

Two hours recitation and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 352 - Powerplant Overhaul

Credits 3

Practical experience in overhauling reciprocating engines. Engines are assembled and operationally checked in lab.

Note

One hour lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 321.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 370 - Advanced Aircraft Avionics and Instrument Systems**Credits 3**

Advanced study of flight instrument systems and navigation/communication electronic aids installed on large Corporate and Transport Category aircraft. The course includes both lecture and practical applications of these systems to include operation, inspection, fault analysis and repair. The course includes flight management systems, and GPWS, TAWS, laser gyro and advanced Comm/Nav applications.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 305.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVM 390 - Problems in Aviation**Credits 1-18**

Provides the student the opportunity for advanced study in a specific topic area or to apply aviation education to the improvement of skills previously learned.

Note

Topics are selected jointly by the student and the instructor.

Repeat for Credit

Y

Requisites

Prerequisite: Consent of instructor.

Typically Offered

Fall, Spring, Summer

AVM 401 - Aircraft Airworthiness, Conformity, and Quality Assurance

Credits 3

A capstone course requiring students to tie all previous coursework associated with airframe and powerplant systems maintenance and operations together to perform an effective and safe inspection of the entire aircraft in compliance with manufacturer's recommendations and FAR requirements. This course emphasizes practical experiences necessary to inspect the aircraft for continued airworthiness. Aircraft is weighed and conformity inspections are performed. All work and inspection status is recorded and documented using approved maintenance entries. Part 145 operational requirements are included in the course experience and work team scheduling and coordination is emphasized.

Note

Three hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor consent.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVM 402 - Gas Turbine Powerplant Technology

Credits 3

A study in the theory, operation, construction, design, and maintenance of gas turbine powerplants installed in aircraft. Topics include jet propulsion history and development, the Brayton cycle, turbine engine systems, thrust reverser operations, and emerging trends in the design and application of gas turbine engines. Practical experiences include engine removal, installation, engine test cell operations, and troubleshooting to an airworthy standard with an emphasis on disassembly and inspection of small turboprop/turboshaft engines commonly found on turbine twin-engine aircraft and helicopters.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

None

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVM 403 - Advanced Aircraft Avionics and Instrument Systems

Credits 2

Advanced study of flight instrument systems and navigation/communication electronic aids installed on large Corporate and Transport Category aircraft. The course includes both lecture and practical applications of these systems to include operation, inspection, fault analysis and repair. The course includes flight management systems, and GPWS, TAWS, laser gyro and advanced Comm/Nav applications.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 305.

Typically Offered

Fall

K-State 8

Natural and Physical Sciences

AVM 497 - Aviation Maintenance Capstone

Credits 3

A capstone course designed to help prepare the students for industry-required credentials. It will be comprehensive in nature to the rest of the curriculum. Subjects will be incorporated from the rest of the applicable curriculum and the ACS standards. Students shall research and present a topic as determined by the instructor.

Note

Two hours lecture, three hours lab a week

Repeat for Credit

N

Requisites

Corequisite: AVM 301 and AVM 402

Typically Offered
Fall, Spring, Summer

Aviation Maintenance Prep

AMP 101 - Introduction to Aviation Regulations and Aircraft Drawings

Credits 3

A review of the role and organizational structure of the Federal Aviation Administration (FAA) as it relates to the certification and continued airworthiness of aircraft and its operation in general, business, and commercial aviation environments. Emphasis on the privileges and limitations of certificated personnel who maintain aircraft systems in the context of the FAA regulations. Includes concepts of weight and balance, logbook entries, and accurate use of graphs and charts. Students demonstrate the ability to read and comprehend information contained in FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material. Students learn how to read, understand, and interpret aircraft drawings commonly found in the aviation maintenance industry.

Repeat for Credit
N

Typically Offered
Fall or Spring

AMP 102 - Aviation Math and Physics

Credits 3

This is a study of basic math and physics as required by aircraft technicians and defined by FAR 147. Use and understand the principles of simple machines, sound, fluid, and heat dynamics, basic aerodynamics, aircraft structures, and theory of flight. Apply, calculate, and solve basic math functions, ratios and proportions, and algebraic equations that are relevant to aviation. Students will also learn the concepts involved in weighing and balancing an aircraft.

Repeat for Credit
N

Typically Offered
Fall or Spring

AMP 103 - Concepts of Aircraft Materials and Tooling Standards

Credits 3

The concepts essential to understanding aircraft material properties and fabrication techniques are taught. Emphasizes knowledge: shop safety, organization and human factors associated with shop practices, basic aircraft structural materials and hardware familiarization, fluid lines and fittings, hand tool selection and use, and aviation-specific dimensional inspection tools and techniques, aircraft hardware identification and applications, cleaning and corrosion control, aircraft metal selection and applications, and aircraft material inspection fundamentals.

Repeat for Credit

N

Typically Offered

Fall or Spring

AMP 104 - Basic Aircraft Electricity and Ground Operations**Credits 3**

A basic concept of DC/AC circuits, with basic laws relating to the following: measuring voltage, current, resistance, continuity and leakage; relationship of voltage, current and resistance in electrical circuits; reading and interpretation of electrical circuit diagrams; electrical devices and inspection and servicing of batteries. Introduction to digital numbering systems and digital logic functions. Also included are the introduction to air transport maintenance procedures, aircraft ground operations, and knowledge of aircraft batteries.

Repeat for Credit

N

Typically Offered

Fall or Spring

AMP 105 - Application of General Aviation Maintenance Concepts**Credits 2**

This laboratory course provides hands-on experience with fundamental aviation maintenance tasks aligned with concepts from AMP 101–104. Students will gain practical skills in weighing aircraft, taking critical measurements, performing non-destructive testing, moving and securing aircraft, and executing basic ground operations. Additional training includes aircraft servicing, fueling, ground running, shop safety procedures and processes, flight line safety, and other general aviation-related tasks.

Repeat for Credit

N

Typically Offered

Fall or Spring

Aviation Maintenance Review**AVMR 220 - Aviation Maintenance Review/General****Credits 4**

The general review course is designed for those individuals who have met the Federal Aviation Administration's eligibility requirements under FAR 65.77. The review conforms to the three levels of training set forth by the FAA. Three hours rec. and three hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

AVMR 230 - Aviation Maintenance Review/Airframe**Credits 4**

The airframe review course is designed for those individuals who have met the Federal Aviation Administration's eligibility requirements under FAR 65.77. The review conforms to the three levels of training set forth by the FAA.

Repeat for Credit

N

Typically Offered

Fall, Spring

AVMR 250 - Aviation Maintenance Review/Powerplant**Credits 4**

The powerplant review course is designed for those individuals who have met the Federal Aviation Administration's eligibility requirements under FAR 65.77. The review conforms to the three levels of training set forth by the FAA.

Repeat for Credit

N

Typically Offered

Fall, Spring

Aviation Technology**AVT 100 - Introduction to Aviation****Credits 3**

This course examines the history of aviation and a look at the future. Students discuss the attributes of an aviation professional, careers, career planning, and pilot certification. Students consider historical events and their relationship to current aviation aspects. The interdependency and synergy in the development of military aircraft, the space program, as well as the growth of commercial and general aviation is discussed. Students use the Internet for various research projects concerning the past, present, and future of aviation.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AVT 120 - Aeronautical Programs Flight Familiarization

Credits 1

An introduction to the fundamentals of flight in various types and categories of aircraft. A familiarization of piloting skills and knowledge, a demonstration of aircraft capabilities, and the National Airspace System.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 111.

Typically Offered

Fall, Spring, Summer

AVT 240 - Introduction to Air Traffic Control

Credits 3

An introductory air traffic control (ATC) course that focuses on Terminal, Enroute, and FSS ATC procedures. The course examines the role of an air traffic controller at the various operational positions throughout the ATC system. The course gives an overview of the current U.S. National Airspace System as it relates to ATC procedures. In addition, the course looks at the use of future technologies and how they enhance the ATC system. Off-campus trips contribute to experiential learning.

Note

Two hours lecture and two hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVT 242 - Aviation Meteorology

Credits 3

Basic aviation-related meteorology concepts through the study of atmospheric elements and how they generally affect the weather: introduction to the subject, water in the atmosphere, variables which cause local weather changes, specific aviation-associated hazards, understanding meteorological reports and forecasts, meteorological techniques used in predicting weather patterns.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

AVT 243 - Aircraft Electrical, Navigational, and Communication Systems**Credits 3**

Provides students the basic knowledge of aircraft electrical systems, including navigation, communications, instruments, and power systems.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111.

Typically Offered

Other

K-State 8

Empirical and Quantitative Reasoning

AVT 250 - Safety and Security of Airport Ground Operations**Credits 3**

This course discusses general aviation airport ground operations, particularly from the mechanic, pilot, and ramp worker perspective. Focus will be on increasing awareness of airport operations. Attention will be given to improving airport safety by creating an enhanced awareness of rules, policies, procedures, and potential hazards that affect all individuals working in and around the airport ground operations environment. Some topics included are: aircraft marshalling procedures, airfield security issues, ground vehicle operations, and security and accident/incident response reporting.

Repeat for Credit

N

Typically Offered

Spring

K-State 8

Historical Perspectives

K-State 8 Tag 2

Human Diversity within the U.S.

AVT 315 - Advanced Avionics

Credits 3

This course covers the latest developments and trends in navigation and communication systems. Topics include Future Aviation Navigation Systems (FANS), fiber optics, enhanced vision, ADS-B, the FAA's NextGen, as well as other advancements in avionics.

Note

Three hours lecture a week.

Repeat for Credit

N

Requisites

Corequisite: AVM 241 or AVM 242.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 316 - AET and FCC Training**Credits 1**

This course is a self-paced lab that allows students to study for their Aviation Electronics Technician certificate and their Federal Communication Commission license in Elements 1, 3 and 8.

Note

Two hours lab a week.

This is a credit/no-credit course and will not affect the student's GPA.

Repeat for Credit

N

Typically Offered

Fall, Spring

AVT 317 - Composites I**Credits 3**

Introduction to composite materials used in a broad range of industries with an emphasis on aero structure. Topics include defining a composite, understanding the materials, safety aspects, and shop layouts that are used to produce composite parts. An overview of the construction methods, understanding how to inspect components for damage, and procedures to perform the actual repair used in industry today. Students develop an understanding of how to design/source industrial composite fasteners and install into the composite structure and the science of coatings for the protection of both the composite materials as well as metallic components adjacent to composites. The labs support the lectures with projects designed to give the student hands on application.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 318 - Composites I Laboratory**Credits 2**

An optional laboratory course introducing the use of equipment and materials utilized in the advanced composites industry.

Note

Four hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVT 317.

Typically Offered

Fall

AVT 327 - Avionics Repair**Credits 3**

An in depth overview of aircraft wiring. Procedures in terminating, repairing, testing and troubleshooting of aircraft wiring, as well as aging wiring inspections.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 330 - Avionics Troubleshooting**Credits 4**

An in-depth troubleshooting project, requiring critical thinking to analyze the problem and provide the correct repairs.

Note

One hour lecture and six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVT 327.

Typically Offered

Spring-Even Years

AVT 340 - Human Factors in Aviation**Credits 3**

Explores the physical environment and physiology limitations imposed on the aviation professional. Health, fatigue, human behavior and errors, communication, team building, leadership, situation awareness, crew resource management, judgment, and aeronautical decision making are studied to achieve safe and efficient operation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111 or AVT 100, or junior standing.

Typically Offered

Fall, Spring

K-State 8

Natural and Physical Sciences

K-State 8 Tag 2

Social Sciences

AVT 360 - Airport Law**Credits 3**

A study of how the U.S. regulatory and legal systems work in relation to airport management. This course emphasizes contract law related to the Federal Aviation Administration Airport covenants and restrictions, Federal Aviation Regulation compliance and airport operator liability.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 361 - Airport Environmental Studies

Credits 3

Introduction to responsibilities, liabilities and public relations when dealing with environmental issues in day-to-day airport operations. Includes strategies for addressing airport and aircraft noise, wildlife hazard mitigation, compatible land use, wetlands, historical properties and impacts of construction. Federal regulations and enforcement are studied with emphasis on the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Pollution Prevention ACT, and National Historic Preservation Act as they apply to airports.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100 and ENGL 200

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 380 - Airport Operations

Credits 3

A study of the daily operations of an airfield in compliance with regulatory agencies, understanding the role of liaison to airport staff regarding operations, development of department budgets, knowledge of effective supervisory practices and principles, ability to plan and carry out airport operations and development programs under airport management matrix.

Note

Three hours lecture and three hour lab per week.

Repeat for Credit

N

Requisites

Prerequisite: ENGL 200

Typically Offered

Spring

AVT 386 - Aerodynamics

Credits 3

This course covers incompressible flow theory and wing theory as well as calculations of stall speed, drag, and basic performance criteria. This course also examines configuration changes, high and low speed conditions, and special flight operations. Stability and control, weight and balance, and operational data are also examined. Aerodynamic performance of aircraft powered by reciprocating, turboprop, and jet turbine engines are considered. The student will be introduced to aircraft design and high-speed aerodynamics.

Repeat for Credit

N

Requisites

Prerequisite: MATH 100; and PPIL 111 or AVM 141.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

AVT 389 - Problems in Aviation

Credits 1-18

Provides the student an opportunity to apply their aviation education to the improvement of skills previously learned as designated by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

AVT 400 - Composites II

Credits 3

Continued study of the mechanical properties of several composite materials along with strengths and limitations. Topics include gelcoats for tooling and part production, layup of semi complex composite parts using wet layup and vacuum bagging techniques, simple mold development, construction, and repair. Additionally, students are introduced to compression composite molding compounds and tooling required for production, and composite facility layout and outfitting. The lab will support the lectures with projects designed to give the student the hands on application.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 303 or AVT 317.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVT 405 - Introduction to Non-destructive Testing

Credits 2

Introduction to non-destructive testing (NDT) and inspection methods commonly used to detect material anomalies in diverse industries. NDT methods used in aviation/mechanical structures and components is emphasized. Students gain practice using Visual, x-ray (radiographic, magnetic particle, ultra-sound, eddy current and dye penetrant), NDT methods and techniques on test samples. Serviceability of the components is determined using approved manufacturers service limits.

Note

Two hours lecture and three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: MET 121, or MET 231 and MET 245.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVT 410 - Aviation Maintenance Management**Credits 3**

Provides students with an understanding of general aviation and commercial aviation maintenance programs. Includes regulations, maintenance levels, technical publications, quality assurance, inspections, human factors, and unions. It also provides an understanding of the difficulties in managing a line operation. Case studies of maintenance scenarios are used.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Global Issues and Perspectives

AVT 417 - Composites III**Credits 3**

Continued study of the highly complex composite parts and associated molding technologies used to produce these parts. Topics include the construction of resin infusion parts and mold construction, reusable vacuum bagging materials, application of preimpregnated materials and tooling designed to withstand oven cure cycles, discussion of advanced materials and techniques new to the industry. The lab will support the lectures with projects designed to give the student the hands on application in a relative environment.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: AVT 400.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

AVT 420 - Aviation Accident Investigation**Credits 3**

This course is designed to provide a general understanding of the methods and procedures used in aviation accident investigation. Students in this course will learn methods used to gather and analyze facts of accidents as well as determine probable cause and contributing factors. Procedures and techniques used to determine accident causes will also be analyzed. Historical accident reports from National Transportation Safety Board (NTSB) and other organizations will be examined.

Repeat for Credit

N

Requisites

Corequisite: AVT 340 and junior standing.

Typically Offered

Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

AVT 429 - Avionics Maintenance**Credits 3**

Provides the basic knowledge to repair and install pitot-static systems. Practical experience in troubleshooting and using maintenance test equipment.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 305.

Typically Offered

Fall-Odd Years

K-State 8

Empirical and Quantitative Reasoning

AVT 430 - Advanced Avionics Installation

Credits 3

Provides practical knowledge of avionics suite installation, to include Garmin. Students will gain additional experience in operational checks, troubleshooting and software loading on the Garmin G1000/900X. This course is an individual semester long project.

Note

One hour lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVT 327.

Typically Offered

Spring-Odd Years

K-State 8

Empirical and Quantitative Reasoning

AVT 435 - Air Transportation

Credits 3

This interactive course examines the development of the United States air transportation system, current issues, and the competitive strategies of past and present airline executives; examines the many attributes of starting and operating a successful airline in a competitive market; and explores the role of airport operations and the commercial and corporate aircraft that challenge the air transportation system.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Summer

AVT 440 - Air Carrier Operations

Credits 3

A study of Federal Aviation Regulations that influence air carrier and commercial operators. Students will gain an appreciation of the variety of regulatory issues involved in air carrier operations such as certification, training, and operational safety and security requirements. Students will also gather the background information necessary to correlate and apply relevant regulations to daily

aviation operations. The course focuses on FAR Part 61, 91, 119, 121, and 135.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111 or AVT 100, and junior standing.

Typically Offered

Spring

AVT 442 - Advanced Air Traffic Control

Credits 3

An in-depth study of tower, TRACON, and enroute procedures. Also examines the FAA's future air navigation system concept.

Repeat for Credit

N

Requisites

Prerequisite: AVT 240, PPIL 112.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

AVT 445 - Aviation Law

Credits 3

A study of how the U.S. regulatory and legal systems work in relation to aviation activities. It is designed to help those in the aviation industry understand their rights, liabilities, and responsibilities and avoid common legal pitfalls. Emphasis will also be placed on aircraft ownership, registration, and insurance.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 446 - Corporate and Business Aviation Management

Credits 3

A study of the history of corporate and business aviation, the regulation of the industry, and the operation and management of corporate and business flight departments. Students will receive an overview of the social, economic, and political effects of business aviation. Aircraft selection and utilization, maintenance responsibilities, fiscal considerations, fractional ownership, and passenger and crew safety and security measures will also be studied.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

AVT 448 - Aviation Legislation

Credits 3

Students are required to take part in the University Aviation Association's Annual Seminar on Establishing Aviation Policy during the first full week of January in Washington, D.C. Students prepare for the seminar with required reading assignments.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

AVT 450 - Aviation Safety Management

Credits 3

A course designed to assist the student to develop an attitude and philosophy for accident prevention. The course includes ideal and practical, personal and organizational safety procedures and goals; safety philosophies; aircraft accident reports; human factors; principles of accident investigation; accident prevention program and accident statistics; current events; NTSB special studies. The safety program is analyzed from the theoretical and philosophic points of view. A safety program is developed with an examination of safety concepts, the human elements of accidents, managing a safety office in an organization, and current events.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing.

Typically Offered

Fall

K-State 8

Empirical and Quantitative Reasoning

AVT 451 - System Safety**Credits 3**

This course is designed to provide an understanding of the system safety discipline. Students will learn how the system safety process is used in accident prevention and examine its role in management. Students will also examine various aircraft systems for overall safety of operation.

Repeat for Credit

N

Requisites

Prerequisite: AVT 450.

Typically Offered

Spring-Odd Years

K-State 8

Empirical and Quantitative Reasoning

AVT 455 - Current Trends and Issues in Aviation**Credits 3**

This course explores current trends and issues in the aviation industry. Emphasis is placed on discussing current issues that are impacting the world aviation marketplace. Students will address these issues and trends from the standpoint of application to their career, relevance to the economic viability of the industry, and the impact such trends place on aircraft operators and manufacturers.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

AVT 461 - Airport Management**Credits 3**

An in depth study of both landside and airside airport business management, utilizing the American Association of Airport Executives' Body of Knowledge modules. Includes a study of the role of the airport in community development.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: Junior standing

Typically Offered

Fall

AVT 462 - Airport Planning**Credits 4**

A study of airport planning and practices to understand FAR Regulation part 139 airport design standard as well as a study of both landside and airside planning issues utilizing the American Association of Airport Executive's Body of Knowledge modules.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: AVT 461.

Typically Offered

Fall

AVT 464 - Airport Certified Manager**Credits 1**

The study and preparation for various forms of certification within the AAAE realm including the opportunity to study and take the Airport Certified Employee (ACE) exams and the Certified Member (CM) exam.

Note

One hour lab a week.

Repeat for Credit

N

Requisites

Prerequisite: AVT 250, AVT 360, AVT 462.

Typically Offered

Spring

AVT 480 - Airport Global Networks**Credits 3**

An introduction to the economic, political, and civic challenges that impact the profitability of airports worldwide and the steps

being taken by the airport industry and international governing bodies to address them.

Repeat for Credit

N

Requisites

Prerequisite: AVT 380, Junior Standing, and ENGL 302

Typically Offered

Spring

K-State 8

Global Issues and Perspectives

AVT 482 - Aviation Ethics and Leadership

Credits 3

Students acquire an understanding of core leadership values demanded by the aviation industry, understand leadership challenges facing the aviation industry, and identify personal leadership styles and their most effective implementation within industry.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

AVT 485 - Helicopter Maintenance

Credits 3

An advanced study of the major components of rotary-winged aircraft to include airframe, rotor, transmission and engine components of turbine and reciprocating engine helicopters. Also includes a detailed study and validation of all Federal Aviation Administration required documentation related to maintenance, historical records, and inspection of components.

Note

Two hours lecture and 4 hours lab per week.

Repeat for Credit

N

Requisites

Prerequisite: AVM 111, 121, 131, 141, 151 or consent of instructor.

Typically Offered

Summer

K-State 8

Ethical Reasoning and Responsibility

AVT 497 - Senior Capstone

Credits 3

This culminating experience is a sustained occasion when students will put into independent practice the intellectual, creative, and expressive skills/knowledge they have cultivated in their undergraduate curriculum. In this course students integrate discipline-specific knowledge in addition to communication and inquiry methods to solve problems and communicate mastery of their respective area of interest.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor consent.

Typically Offered

Fall, Spring

AVT 498 - Research Project

Credits 1-9

Research, scholarly and creative activities in the aviation field. Working with faculty on a current research project.

Note

The specific course content varies in accordance with current projects.

Repeat for Credit

N

Requisites

Prerequisite: Junior or senior standing.

Typically Offered

Fall, Spring, Summer

AVT 560 - Airport Design

Credits 4

Student teams with faculty and industry advisors prepare to enter their work in the Airport Cooperative Research Program's (ACRP) national design competition for universities addressing issues relating to airports and the National Airspace System. The competition focuses on design solutions in the following broad areas: Airport Operation and Maintenance, Runway Safety/Runway Incursions/Runway Excursions, Airport Environmental Interactions, and Airport Management and Planning.

Repeat for Credit

N

Requisites

Prerequisite: AVT 360, AVT 361, and AVT 462.

Typically Offered

Spring

AVT 611 - Aircraft Regulation and Certification

Credits 3

Provides an overview of the FAA certification process relating how the certification process contributes to a safe National Airspace System. Application of relevant Federal Aviation Regulations. Covers both aircraft type and production certification to include airframe, engine, and component certification. Covers the history of aviation regulation and corresponding relationship to aerospace safety.

Repeat for Credit

N

Typically Offered

Fall

AVT 703 - Project Management for Aerospace Professionals

Credits 3

This course focuses on applied project management, methodology, tools, and techniques. Topics include career aspects of project management; business factors affecting the project; project organization, planning, execution, and communications; the project life cycle; risk analysis; and best practices in project management. Course will include specific applications in the aviation/aerospace sector.

Repeat for Credit

N

Typically Offered

Fall

AVT 707 - Research Methods

Credits 3

Provides students with the skills necessary to perform graduate-level research in the field of technology. Course focuses primarily on quantitative research; however, qualitative and mixed-method research methods are also covered. Statistical Research Software applications are also included.

Repeat for Credit

N

Typically Offered

On sufficient demand

AVT 722 - Aircraft Type Certification

Credits 3

A detailed examination of the type certification process leading to the issuance of a type certificate, and changes to a type certificate through an amended type certificate, supplemental type certificate, or amended supplemental type certificate. Covers FAA and international certification standards and regulating bodies as well as relevant performance standards to include role of FAA Advisory Circulars, DO 160, 178, and 254, SAE, ASTM, and other industry standards in the certification process. Presents

the continuing airworthiness process, including the issuance of airworthiness directives, and the relationship of manufacturer service bulletins, and service letters. Brief discussion on type validation process. Discuss the importance of developing processes to manage all of the data associated with the certification process.

Repeat for Credit

N

Requisites

Prerequisite: AVT 611

Typically Offered

Fall, Spring, Summer

AVT 734 - Advanced Aircraft Certification

Credits 3

A detailed examination of the process to determine applicable regulations for changed aeronautical products, certification project planning elements not covered by AVT 722, application of selected means and methods of compliance, delegation systems, and certification validation processes for export of aeronautical products.

Note

Name was changed to Advanced Aircraft Certification. <https://kstate.curriculog.com/proposal:7708/form>

Repeat for Credit

N

Requisites

Prerequisite: AVT 722

Typically Offered

Fall, Spring, Summer

AVT 744 - Aviation Human Factors Analysis and Design

Credits 3

An in-depth exploration of the history of air safety as related to human error and how system safety has been greatly enhanced by the incorporation of the fundamentals of human factors in design. Students will understand and articulate the major advances in Human Factors research over the past 40 years and identify knowledge gaps yet to be filled.

Repeat for Credit

N

Requisites

Prerequisite: AVT 611.

Typically Offered

On sufficient demand

AVT 751 - Aerospace Policy

Credits 3

Students will understand State and Federal legislative processes and appreciate how ideas become law. This course will specifically include a study of the concepts of advocacy, building coalitions, caucuses, theories of statutory interpretation, and drafting legislation. Where possible the course will include meeting with legislators. Students will also understand how to attain, track, and influence Federal legislation affecting the aviation/aerospace industry.

Repeat for Credit

N

Typically Offered

On sufficient demand

AVT 771 - Leadership in the Aerospace Sector**Credits 3**

An exploration of the theories of leadership and critical issues facing aerospace sector leadership in the coming decades. Concepts of resilience, contingencies, communication, collaboration, ethics, strategic planning, failure/recovery, and cultural transformation will be explored. At the end of this course students will understand and appreciate the differences between effective and ineffective leaders.

Repeat for Credit

N

Typically Offered

On sufficient demand

AVT 790 - Aerospace Topics**Credits 3**

Variable content as determined by the instructor to address emerging issues and challenges related to the aviation industry and aerospace safety.

Repeat for Credit

Y

Typically Offered

On sufficient demand

AVT 799 - Advanced Topics in Aeronautics**Credits 3**

Advanced topics in Master of Science in Aeronautics.

Repeat for Credit

Y

Requisites

Prerequisite: Instructor consent.

Typically Offered
On sufficient demand

AVT 836 - Master of Science in Aeronautics Capstone Project

Credits 3

An applied project focused on either aircraft certification or aerospace leadership/policy. This course is designed to improve the demonstration of professional knowledge in the student's technical discipline.

Repeat for Credit
N

Requisites
Prerequisite: AVT 611, AVT 707, COT 701, and advisor permission

Typically Offered
Spring

AVT 838 - MSA Thesis

Credits 1-6

Required research for M.S.A. thesis option students.

Repeat for Credit
Y

Requisites
Prerequisites: AVT 611, AVT 707

Typically Offered
On sufficient demand

AVT 841 - Aerospace Safety Management Systems (SMS)

Credits 3

An in-depth analysis of aviation safety across all elements of the industry from manufacturing to training, to airports. The student will understand the impacts and challenges of balancing operational efficiencies with the maximization of organizational safety. Safety Management Systems (SMS) concepts will be explored, and students will have the opportunity to design a sample SMS program.

Repeat for Credit
N

Typically Offered
Fall, Spring, Summer

Professional Aviation

PAV 101 - Private Pilot

Credits 5

Awards academic credit for the Federal Aviation Administration Private Pilot certificate.

Note

This may be used as a substitute for PPIL 111 and 113 for the purpose of awarding academic credit for ratings earned elsewhere. This course may not be used to fulfill the requirements for Reduced ATP as outlined in the FAA-KSU LOA.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 102 - Instrument Pilot**Credits 4**

This course is offered to give academic credit for the Federal Aviation Administration Instrument Pilot rating.

Note

This may be used as a substitute for PPIL 112 and 114 for the purpose of awarding academic credit for ratings earned elsewhere. This course may not be used to fulfill the requirements for Reduced ATP as outlined in the FAA-KSU LOA.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 201 - Commercial Pilot**Credits 7**

This course is offered to give academic credit for the Federal Aviation Administration Commercial Pilot certificate.

Note

This may be used as a substitute for PPIL 211, 212, and 213 for the purpose of awarding academic credit for ratings earned elsewhere. This course may not be used to fulfill the requirements for Reduced ATP as outlined in the FAA-KSU LOA

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 202 - Additional Aircraft Category, Class, and/or Type Rating**Credits 1-5**

This course is offered to give academic credit for the Federal Aviation Administration additional aircraft category, class and/or type ratings. Credit will be given for one type rating only.

Note

This may not be used as a substitute for PPIL 262 and PPIL 263 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 217 - Airframe A**Credits 9**

This course is offered to give partial academic credit for the Federal Aviation Administration Airframe certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 318

Typically Offered

Fall, Spring, Summer

PAV 227 - Powerplant A**Credits 9**

This course is offered to give partial academic credit for the Federal Aviation Administration Powerplant certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 328

Typically Offered

Fall, Spring, Summer

PAV 301 - Instructor Pilot**Credits 8**

This course is offered to give academic credit for the Federal Aviation Administration Flight Instructor certificate.

Note

This may not be used as a substitute for PPIL 310, PPIL 311, PPIL 312 or PPIL 314 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 302 - Airline Transport Pilot**Credits 2**

This course is offered to give academic credit for the Federal Aviation Administration Airline Transport Pilot certificate.

Note

This may not be used as a substitute for PPIL 385 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 318 - Airframe B**Credits 6**

This course is offered to give partial academic credit for the Federal Aviation Administration Airframe certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 217

Typically Offered

Fall, Spring, Summer

PAV 328 - Powerplant B**Credits 6**

This course is offered to give partial academic credit for the Federal Aviation Administration Powerplant certificate.

Note

This may not be used as a substitute for AVM courses in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Requisites

Corequisite: PAV 227

Typically Offered

Fall, Spring, Summer

PAV 401 - Additional Flight Instructor Ratings**Credits 1-4**

This course is offered to give academic credit for the Federal Aviation Administration Instrument Flight Instructor certificate.

Note

This may not be used as a substitute for PPIL 482, PPIL 483, PPIL 492, or PPIL 493 in any program. Since the Professional Aviation degree option is specifically designed as a degree completion option for students that have significant aviation experience, credit will not be allowed for certificates or ratings earned after being accepted in the BATN-PA degree option.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PAV 497 - Senior Capstone**Credits 3**

This is a culminating experience for the Professional Aviation option. Students will integrate the intellectual, creative, and expressive skills/knowledge they have cultivated in their undergraduate curriculum. Additionally, students will combine discipline-specific knowledge with communication and inquiry methods to solve problems and communicate mastery of their respective area of interest.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing and instructor consent.

Typically Offered

Fall, Spring

Professional Pilot**PPIL 101 - FAA Pilot Certificate Validation****Credits 1-4**

Flight and knowledge validation of FAA pilot certificates.

Repeat for Credit

N

Requisites

Prerequisite: Instructor permission.

Typically Offered

Fall, Spring, Summer

PPIL 108 - Private Pilot Flight Lab Solo**Credits 0.5**

This course provides students with basic flight knowledge and fundamentals for solo flight as outlined by the Federal Aviation Administration (FAA). The successful completion of this course is the solo stage check.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 111

Typically Offered

Fall, Spring, Summer

PPIL 110 - Private Pilot Flight Lab Certification**Credits 0.5**

A continuation of PPIL 108 after solo flight and stage check. Upon completion of the course, students will meet the requirements for the FAA Private Pilot Certificate.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 108

Corequisite: PPIL 111

Typically Offered

Fall, Spring, Summer

PPIL 111 - Private Pilot**Credits 4**

The subject areas necessary for completion and passing of the FAA Private Pilot Knowledge Test are presented.

Note

Four hours recitation a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 112 - Professional Instrument Pilot**Credits 3**

A study of the procedures, regulations, and techniques required to safely fly in instrument meteorological conditions within our national airspace system. The course will prepare the student to pass the FAA Instrument Airplane Knowledge Test.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111

Corequisite: MATH 100.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 113 - Private Pilot Flight Lab

Credits 1

An introduction of the fundamentals of flight. Solo flights to include all flight operations and maneuvers necessary for meeting the aeronautical experience for the FAA Private Pilot Certificate.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 111.

Typically Offered

Fall, Spring, Summer

PPIL 114 - Professional Instrument Pilot Flight Lab

Credits 1

Instructional flight training necessary to maneuver the aircraft safely in actual or simulated instrument meteorological conditions within the national airspace system.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 111, PPIL 113. Corequisite: PPIL 112.

Typically Offered

Fall, Spring, Summer

PPIL 196 - VFR Pilot Proficiency Lab

Credits 1

Instruction and flight training necessary to safely operate an aircraft to meet the Federal Aviation Regulations. This course provides the student the opportunity to review and demonstrate proficiency to satisfactorily meet the FAA regulations for the current ratings held.

Note: Successful completion will result in a flight review required by FAR 61.56.

Note

Please add to description: Successful completion will result in a flight review required by FAR 61.56.

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PPIL 197 - IFR Pilot Proficiency Lab**Credits 1**

Instruction, simulator, and flight training necessary to safely operate an aircraft, to meet and maintain the Federal Aviation Regulations currency requirement of Instrument Competency, and maintain instrument currency and proficiency.

Note: Successful completion will result in an Instrument Proficiency Check (IPC) required by FAR 61.57d.

Note

Catalog change only

Repeat for Credit

N

Typically Offered

Fall, Spring, Summer

PPIL 210 - Aviation Safety**Credits 3**

This course provides an introduction to the field of aviation safety with an emphasis on promoting a safety culture. Various safety programs and their relevance in the field of aviation are discussed. Students will examine numerous accident reports and discuss safety issues facing the aviation industry today.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PPIL 211 - Professional Commercial Pilot**Credits 3**

The subject areas necessary for passing the FAA Commercial Pilot Knowledge Test.

Note

Three hours recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 112, PPIL 114.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 212 - Professional Commercial Pilot Flight Lab I**Credits 2**

Instructional cross country flight training necessary to maneuver the aircraft safely in actual or simulated instrument meteorological conditions within the national airspace system.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 112, PPIL 114. Corequisite: PPIL 211.

Typically Offered

Fall, Spring, Summer

PPIL 213 - Professional Commercial Pilot Flight Lab II**Credits 2**

An introduction to complex airplane operations and a review of those operations required of a commercial pilot. The completion of this course readies the student to take the commercial FAA Practical test.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 212.

Typically Offered

Fall, Spring, Summer

PPIL 214 - Extended Cross Country**Credits 1**

A characteristic of aviation is that aircraft can cover a large geographic area. Aircraft operations in other geographic areas may differ greatly from a student's training base. The experience of long-range navigation can be a great learning experience as well

as a confidence booster. Selection of a destination that allows the student to increase their knowledge of aviation also aids in producing a more well-rounded, responsible professional.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 113.

Typically Offered

Other

PPIL 215 - Mountain Flying

Credits 1

A characteristic of aviation is that aircraft can cover a large geographic area. Aircraft operations in mountainous areas may differ greatly from a student's training. The experience of reduced aircraft performance caused by high-density altitudes can be a great training into operations with aircraft exhibiting marginal performance. Learning of weather patterns, hypoxia, and survival allows the student to increase their knowledge of aviation and also aids in producing a more well-rounded, responsible professional.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 114 and instructor consent.

Typically Offered

On sufficient demand

PPIL 216 - Altitude Chamber

Credits 1

This course offers a 1-day aviation physiology course for civil aviation pilots through the CAMI's Aeromedical Education Division in Oklahoma City, OK. In addition to the basic academic contents, this course offers practical demonstrations of rapid decompression and hypoxia in a hypobaric chamber, as well as a practical demonstration of spatial disorientation. Upon completion of the course students will receive a certificate noting that they have completed the FAA's Physiological Training course. The FFA requires a current Aviation Medical Certificate.

Repeat for Credit

N

Typically Offered

Fall, Spring

PPIL 217 - Glider Towing

Credits 1

Instruction and flight training necessary to obtain a logbook endorsement in the techniques and procedures for the safe towing of gliders.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 113.

Typically Offered

Fall

PPIL 219 - Single Engine Seaplane Transition**Credits 1**

Instruction and flight training necessary to add the seaplane rating to the commercial pilot certificate. Course requires a one-week trip to a specified contract training location.

Note

One hour lecture a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213.

Typically Offered

Spring

PPIL 221 - Preventive Maintenance**Credits 2**

This course will give the student hands-on experience with the maintenance tasks allowed under FAR 43 entitled preventive maintenance.

Note

One hour lecture and two hours lab a week.

Repeat for Credit

N

Typically Offered

Fall, Spring

K-State 8

Ethical Reasoning and Responsibility

PPIL 230 - Private Pilot Glider Transition**Credits 1**

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of glider aircraft that will lead to an Private Pilot Glider certificate. This course provides students the opportunity to enhance and

develop their skills in this segment of aviation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 113.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 231 - Commercial Pilot Glider Transition

Credits 1

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of glider aircraft that will lead to a commercial pilot glider certificate. This course provides students the opportunity to enhance and develop their skills in this segment of aviation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213 and PPIL 230.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 262 - Multi-Engine Ground School

Credits 1

Ground instruction covering multi-engine aircraft to develop the aeronautical knowledge to meet the ground school requirements for a multi-engine land class rating.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211.

Typically Offered

Fall, Spring, Summer

PPIL 263 - Multi-Engine Flight Lab

Credits 1

Flight instruction and experience in a multi-engine aircraft to develop the aeronautical skills to meet the requirements to add a multi-engine land class rating to the student's existing pilot certificate.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Corequisite: PPIL 262.

Typically Offered

Fall, Spring, Summer

K-State 8

Natural and Physical Sciences

PPIL 290 - Multi-Engine Crew Coordination**Credits 1**

Instruction, simulator and flight training necessary to operate a multi-engine aircraft as a member of a crew. Enhances multi-engine, instrument and cross country skills.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211, PPIL 263.

Typically Offered

Other

PPIL 295 - Tailwheel Transition**Credits 1**

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of conventional-gear (tailwheel) aircraft that will lead to an endorsement allowing the student to act as pilot-in-command. This course provides students the opportunity to enhance and develop their skills in this segment of aviation.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 113.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 296 - Complex/High Performance Transition**Credits 1**

Instruction and flight training in the design, performance, operating characteristics, and flight proficiency for the safe operation of complex/high performance aircraft that will lead to endorsements allowing the student to act as pilot-in-command. This course provides students the opportunity to enhance and develop their skills.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211

Typically Offered

Fall, Spring, Summer

PPIL 310 - Fundamentals of Instruction/Advanced Ground Instructor Ground School**Credits 3**

This course will prepare the student for the Federal Aviation Administration (FAA) Fundamentals of Instruction (FOI) and Advanced Ground Instructor (AGI) Knowledge Tests.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211

Typically Offered

Fall, Spring

PPIL 311 - Certificated Flight Instructor-Airplane Ground School**Credits 3**

Instruction techniques, practices, and procedures necessary to provide skill in organizing and presenting lessons. This course will prepare the student for the FAA Certificated Flight Instructor-Airplane practical test and the Flight Instructor Airplane (FIA) Knowledge Test.

Repeat for Credit

N

Requisites

Co-requisite: PPIL 213 and PPIL 310

Typically Offered

Fall, Spring

PPIL 312 - Certified Flight Instructor Ground School

Credits 6

Instruction techniques, practices, and procedures necessary to provide skill in organizing and presenting lessons. This course will prepare the student for the FAA Certified Instructor Knowledge Test.

Note

Six hours recitation a week.

Repeat for Credit

N

Requisites

Co-requisite: PPIL 213.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Ethical Reasoning and Responsibility

PPIL 314 - Certified Flight Instructor Flight Lab

Credits 2

The needed flight skills and proper display of teaching ability will be emphasized. The demonstration of flight maneuvers with recognition of common errors in students performing the demonstrated maneuvers is stressed.

Note

Six hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213. Concurrent enrollment: PPIL 311 or PPIL 312.

Typically Offered

Fall, Spring, Summer

PPIL 325 - Advanced Aircraft Systems

Credits 3

Electrical, environmental, hydraulic, fuel, ignition, and lubrication systems, including theory of operation and calculations. Principles, systems, analysis, operation, and limitations of advanced electronic navigation, flight director, and automatic flight control systems, including Inertial Navigation Systems and GPS.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 211.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PPIL 379 - Turbine Transition**Credits 3**

To provide required knowledge to meet FAA requirements to operate as second-in-command in KSU transportation aircraft. Covers systems performance and emergency procedures for turbine aircraft. In conjunction with simulator training, students will be qualified to operate as co-pilots on university transportation trips.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 213.

Typically Offered

Fall, Spring

K-State 8

Empirical and Quantitative Reasoning

K-State 8 Tag 2

Natural and Physical Sciences

PPIL 385 - Airline Transport Pilot Rating**Credits 2**

Provides the student with the aeronautical knowledge necessary to prepare for the FAA Airline Transport Pilot Knowledge Test. The demonstration of flight maneuvers, with recognition of proper control of emergencies in compliance of the Airline Transport Pilot Practical Test Standards will be stressed.

Note

One hour lecture and three hours lab a week.

Repeat for Credit

N

Typically Offered

Other

PPIL 387 - Crew Resource Management I

Credits 3

This course involves using all available resources for a safe and efficient flight. Aircraft crew performance is reviewed to include the background and philosophy of Crew Resource Management (CRM) communication, decision behavior, team building, workload management, and situational awareness. Students accomplish two flight scenarios using modern advanced jet aircraft training device.

Note

Two hours lecture and four hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 262, PPIL 325.

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Human Diversity within the U.S.

PPIL 389 - Problems in Aviation**Credits 1-18**

To provide the student an opportunity to apply aviation education to the improvement of skills previously learned as designated by the instructor.

Repeat for Credit

Y

Typically Offered

Fall, Spring, Summer

PPIL 396 - Introduction to Upset Training and Recovery**Credits 1**

Instruction and flight training necessary to develop an understanding and flight proficiency in basic upset flight attitudes. This course provides the student the opportunity to develop a better understanding of aircraft and safety of flight in other than normal flight attitudes.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 114.

Typically Offered

Other

K-State 8

Natural and Physical Sciences

PPIL 416 - Crew Resource Management II**Credits 3**

Utilizing a modern advanced jet aircraft training device, special emphasis is placed on systems knowledge, Flight Management Systems (FMS) programming, flight profiles and cockpit flows. Students fly Line Orientated Flight Training (LOFT) missions and self-critique their performance.

Note

One hour lecture and five hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 387 and AVT 340.

Typically Offered

Spring

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Social Sciences

PPIL 482 - Certified Instrument Flight Instructor Ground School**Credits 1**

Instrument instruction techniques, practices, and procedures necessary to provide skills in organizing and presenting lessons in instrument flying procedures. This course will prepare the student for the FAA Certified Instrument Flight Instructor knowledge test.

Note

One hour recitation per week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 311 or PPIL 312.

Typically Offered

Fall, Spring, Summer

K-State 8

Ethical Reasoning and Responsibility

PPIL 483 - Certified Instrument Flight Instructor Lab

Credits 1

Instrument instruction techniques, practices, and procedures necessary to provide skills in organizing and presenting lessons in instrument flying procedures. This course will prepare the student for the FAA Certified Instrument Flight Instructor practical test.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 314. Prerequisite or corequisite: PPIL 482.

Typically Offered

Fall, Spring, Summer

PPIL 492 - Certified Multi-Engine Flight Instructor Ground School**Credits 1**

Provides the student with the aeronautical knowledge necessary to meet the requirements for the addition of an airplane, multi-engine rating to the flight instructor certificate.

Note

One hour recitation a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 311 or PPIL 312, PPIL 314.

Typically Offered

Fall, Spring

PPIL 493 - Certified Multi-Engine Flight Instructor Lab**Credits 1**

Provides the student with the aeronautical skills and experience necessary to meet the requirements for the addition of an airplane, multi-engine rating to the flight instructor certificate.

Note

Three hours lab a week.

Repeat for Credit

N

Requisites

Prerequisite: PPIL 314. Prerequisite or corequisite: PPIL 492.

Typically Offered
Fall, Spring, Summer

Unmanned Aircraft Systems

UAS 114 - Remote Pilot Certification for UAS

Credits 2

This course helps prepare students to become an FAA-Certified UAS Pilot. This course covers all knowledge topics important for a commercial UAS pilot. Once complete, the student takes the FAA's Remote Pilot in Command knowledge test.

Repeat for Credit
N

Typically Offered
Fall, Spring

UAS 115 - Introduction to Multi-Rotor Flight Lab

Credits 1

Basic through advanced flight training on multi-rotor uncrewed aircraft. This course establishes the foundation of manual flight, basic automation and features. Proficiency is built through standardized maneuvers to meet practical test standards.

Note
For portions of the course, students are required to travel to an area designated for flight operations.

Repeat for Credit
N

Requisites
Corequisite: UAS 114 or proof of a valid RPIC

Typically Offered
Fall, Spring

UAS 270 - Introduction to UAS

Credits 3

Introduction to the history of UAS and survey of current UAS platforms, terminology, challenges to airspace integration and operational theory.

Repeat for Credit
N

Typically Offered
Fall, Spring

K-State 8
Ethical Reasoning and Responsibility

K-State 8 Tag 2
Historical Perspectives

UAS 272 - UAS Safety Fundamentals

Credits 3

Introduction to aviation safety, with an emphasis on best practices for safe operation of unmanned aircraft systems. Topics include safety/risk assessments, human factors, crew resource management, aeronautical decision-making, risk management, and safety assurance.

Repeat for Credit
N

Typically Offered
Fall, Spring

UAS 275 - Small UAS Maintenance I

Credits 3

This course provides students with the knowledge and skill necessary to repair and maintain both fixed- and rotary-wing aircraft during field operations and to ensure continued airworthiness throughout the service life of the aircraft. Instruction emphasizes safe practices, provide an introduction to basic shop tools and machinery used in maintaining sUAS, and develop fundamental skills in platform fabrication and the troubleshooting/repair of the circuits, subsystems and components typically found on sUAS aircraft.

Note
Studio format incorporating lecture and lab elements.

Repeat for Credit
N

Typically Offered
Spring

UAS 280 - Multi-Rotor Construction Lab

Credits 2

This course focuses on the construction of a multi-rotor UAS. This includes gaining an understanding of individual components within the system and integrating the components into a fully functional system. Students will also test and tune the UAS once assembled.

Repeat for Credit
N

Typically Offered
Fall, Spring

UAS 285 - Small Unmanned Aircraft Maintenance II

Credits 3

This course provides students with advanced knowledge and a high level of skill in the maintenance and repair of both fixed- and rotary-wing unmanned aircraft and associated systems. The concept of continued airworthiness is emphasized. Topics include advanced techniques in the fabrication and repair of small unmanned aircraft systems and airframes, maintenance of ground support systems and principles of electronic and integrated circuit maintenance, troubleshooting and repair.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 275.

Typically Offered

Fall

UAS 300 - UAS Powerplant Fundamentals**Credits 3**

A study of the principles of operation, design features, and operating characteristics of various powerplants used in UAS. Includes inspection procedures and operational theory of current electric, piston, hybrid, and turbine propulsion systems.

Note

Two hours lecture and three hours lab per week.

Repeat for Credit

N

Typically Offered

Fall

K-State 8

Ethical Reasoning and Responsibility

K-State 8 Tag 2

Natural and Physical Sciences

UAS 312 - UAS Flight Instructor Ground School**Credits 3**

Intended to prepare the student for the role of UAS flight instructor. Focuses on the fundamentals of flight instruction. Lecture topics cover the techniques and the procedures necessary to generate, organize and present lessons in instructional environment while building necessary skills and emphasizing aspects of instruction necessary to ensure student competencies in the areas of UAS field and flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 114 &UAS 115.

Corequisite: UAS 314.

Typically Offered

Fall

UAS 314 - Multi-rotor Instructor Flight Lab

Credits 1

This course refines advanced multi-rotor skills and provides the practical experience necessary to produce competent multi-rotor flight instructors.

Note

Two hours of lab per week. For portions of the course, students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 115

Corequisite: UAS 312 and proof of a valid Remote Pilot in Command (RPIC)

Typically Offered

Fall

UAS 353 - Command and Control Links and Circuitry

Credits 3

This course provides a detailed examination of the theory and design of UAS command and control (2C) systems and applies this knowledge to develop a thorough understanding of the principles used in the design, maintenance and repair of 2C circuits and subsystem components. Topics include design choices in component selection, circuit and overall system design concepts and troubleshooting.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 275 or consent of instructor.

Typically Offered

Fall

UAS 357 - Introduction to UAS Fixed-Wing Flight Lab

Credits 2

Provides an introduction to the use of an external pilot (EP) console to control fixed-wing UAS. In the event of a lost communications link, avionics or autopilot failure or other emergency, the external pilot is critical to human-in-the-loop

operation of the UAS in effecting a successful recovery of the aircraft. This course develops the skills necessary to ensure students are capable of conducting safe EP operation of fixed-wing UAS during adverse flight conditions.

Note

Four hours of lab per week. Students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 314.

Typically Offered

Spring

UAS 367 - Introduction to UAS Automated Fixed-Wing Flight Lab

Credits 3

This course focuses on developing the pilot's ability to control the UAS via a computer ground control station in the crew role of air vehicle operator (AVO). Students will become proficient in conducting site surveys, building UAS flight plans, contingency planning, emergency procedures, crew resource management, and developing mission briefings. Students will also learn methods for effectively instructing fixed-wing flight operations by developing lesson plans and conducting instructional flights.

Note

Six hours of lab per week plus individual simulator work. Students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 357 and UAS 312.

Typically Offered

Spring

UAS 373 - Small Unmanned Aircraft Design and Construction for Non-Aviators

Credits 3

Topics include: Unmanned Aircraft System platform, payload and component design and interfacing, system and vehicle maintenance, and systems integration. Intended for non-pilot majors and those without the FAA certifications and ratings required for UAS 370.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Corequisite: UAS 270.

Typically Offered

Fall

UAS 374 - Processing Remotely Sensed Data**Credits 3**

Students are introduced to basic theory, history, and practical applications of remote sensing technology, with an emphasis on high spatial resolution multispectral aerial imagery collected using UAS. Other topics include geographic information systems, aerial image interpretation, sensor resolution, orthomosaicing, georegistration, vegetation indices, and image classification.

Repeat for Credit

N

Typically Offered

Fall

UAS 387 - UAS Safety Applications**Credits 2**

This course provides students with the knowledge needed to best prepare for and conduct advanced UAS operations while staying safe. This course will cover Crew Resource Management, Human Factors, Safety Risk Mitigation strategies, and case study investigations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 115.

Typically Offered

Fall

UAS 417 - Fixed-wing Instructor Flight Lab**Credits 2**

This is the culminating course intended to prepare students for roles as fixed-wing unmanned aircraft flight instructors. This course furthers develop and refine the flying skills necessary to assume control of the aircraft during adverse circumstances or unusual aircraft attitudes induced by a less experienced pilot. The fixed-wing instructor-in-training is required to demonstrate, in practice, the skills and knowledge obtained in earlier courses covering crew resource management and flight instruction as well as achievement of a high level of piloting skills. Upon successful completion of this course, the student is qualified as a K-State instructor on fixed-wing platforms and as pilot-in-command/operator-in-command during research missions authorized by the unmanned aircraft systems program.

Note

Four hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: UAS 367.

Typically Offered

Spring

UAS 461 - Autonomous Flight Simulation Lab**Credits 1**

This course provides the student with simulation on high-end, sophisticated, proprietary autopilot systems in preparation for field operations flying aircraft equipped with similar autopilot/avionics packages.

Note

To hours of lab per week.

Repeat for Credit

N

Requisites

Prerequisite: UAS 370.

Corequisite: UAS 465.

Typically Offered

Spring

UAS 463 - Introduction to Autopilots and Mission Planning for Non-Aviators**Credits 3**

Focus is on mission planning and operations within the context of the simulated environment. Students are introduced to commercial, open source and/or proprietary autopilots and are required to complete simulated training missions with the ultimate goal of demonstrating skills competency and knowledge acquisition through evaluations of proficiency (e.g., through "check-outs" or "check-rides"). Students integrate autopilots into selected fixed-wing platforms. Intended for non-UAS majors and those without the FAA certifications and ratings required for UAS 370, UAS 461 and UAS 465.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 373.

Typically Offered

Spring

UAS 465 - Fixed-Wing Construction Lab and Autopilot Integration**Credits 3**

In this course, students will build a fixed-wing UAS. After completing the build and conducting a successful flight, students will

integrate an autopilot into their platform. Using open source ground station software and commercial-off-the-shelf (COTS), open source autopilot firmware and hardware, students learn techniques for integrating autopilots into their selected fixed-wing platform and for exploring precision autonomous flight in preparation for conducting field operations to acquire remotely sensed data.

Repeat for Credit

N

Requisites

Prerequisite: UAS 280

Typically Offered

Spring

UAS 467 - Small Unmanned Aircraft Systems Payloads

Credits 3

Course content covers various types of sUAS sensor packages and appropriate applications, preparing the student to properly select sensors based on mission profile, data needs and mission objectives. Students develop, design and construct a payload for integration into previously constructed aircraft in preparation for conducting missions to obtain data for post-flight processing.

Note

Studio format incorporating lecture and lab elements.

Repeat for Credit

N

Requisites

Prerequisite: UAS 465.

Typically Offered

Fall

UAS 470 - Flight and Field Operations

Credits 3

Emphasis is on advanced unmanned aircraft systems operations in the live flight environment with a focus on safety and crew resource management. Emphasis is on experiential learning. Students are required to travel to an area designated for flight operations.

Note

Studio format incorporating predominantly lab components with less emphasis on lecture.

Repeat for Credit

N

Requisites

Prerequisite: UAS 461 and UAS 465.

Typically Offered

Fall

UAS 471 - Advanced Fixed-Wing Operations Flight Lab

Credits 2

This course provides students with training on a high-end sophisticated, proprietary autopilot system. Course delivery will focus on safety and crew resource management. Emphasis is on experiential learning.

Note

3 hours of lab per week. Students are required to travel to an area designated for flight operations.

Repeat for Credit

N

Requisites

Prerequisite: UAS 357.

Typically Offered

Fall

UAS 475 - Data Acquisition and Post-processing

Credits 3

Students build upon the basic image processing skills gained in the previous course, expanding their knowledge of common aerial image data processing tasks using industry-standard software packages. Aerial data collection methodologies are introduced, including consideration of aerial mission flight parameters.

Repeat for Credit

N

Requisites

Prerequisite: UAS 115 and UAS 374.

Typically Offered

Spring

UAS 476 - Low Altitude Remote Sensing Project Development

Credits 3

Students gain practical experience collecting and processing their own high resolution aerial datasets using multirotor and/or fixed-wing UAS, and are instructed in proven workflows for successful commercial UAS mapping operations. The topic of payload selection and integration will enable a project to collect data for subsequent processing.

Repeat for Credit

N

Requisites

Prerequisite: UAS 475

Typically Offered

Fall

UAS 477 - Fundamentals of Thermography

Credits 3

Students learn the process of acquiring and interpreting radiometrically calibrated thermal imagery, including real-time analysis and ortho mosaicking. Specific topics include history of thermal sensors, best practices for calibration and mission planning, and imagery post-processing methods, analysis, and deliverables. This course will prepare students to enroll in a Level 1 Thermography Certification course.

Note

Elective option for Aeronautical Technology BS–Unmanned Aircraft Systems Option
Course within the UAS Data Analytics Certificate

Repeat for Credit

N

Requisites

Prerequisite: UAS 374

Typically Offered

Fall, Spring

UAS 478 - Fundamentals of LIDAR

Credits 3

Students learn how Light Detection and Ranging (LiDAR) systems are used in an sUAS setting and demonstrate their ability to collect, process, and analyze LiDAR data in various class, group, and individual projects. Specific topics include sUAS LiDAR integration, Global Positioning Systems (GPS), mission planning, post-processing methods and software, and final product deliverables.

Note

Elective option for Aeronautical Technology BS–Unmanned Aircraft Systems Option
Course within the UAS Data Analytics Certificate

Repeat for Credit

N

Requisites

Prerequisite: UAS 374

Typically Offered

Fall, Spring

UAS 480 - UAS Senior Design Project I

Credits 1

Culminating experience is a sustained occasion when students will put into independent practice the intellectual, creative, and expressive skills/knowledge they have cultivated in their undergraduate curriculum. In this course students integrate discipline-specific knowledge in addition to communication and inquiry methods to solve problems and communicate mastery of their respective area of interest.

Repeat for Credit

N

Requisites

Prerequisite: Senior standing.

Typically Offered

Fall

UAS 481 - UAS Senior Design Project II**Credits 2**

A continuation of UAS 480. Includes the implementation, testing, and delivery of the project initiated in UAS 480 UAS Senior Design I. Significant milestones are the completion of checkpoints outlined in the project proposal prepared in UAS 480 along with implementation, final report and final presentation.

Repeat for Credit

N

Requisites

Prerequisite: UAS 480

Typically Offered

Spring

Integrated Studies**Troy Harding, Head**

Kansas State University Salina
Aerospace and Technology Campus
2310 Centennial Road
Salina, KS 67401-8196

785-289-2650
salinaadmissions@k-state.edu

<https://www.salina.k-state.edu/>

Accelerated**Accelerated Applied Business and Technology - Applied Business (BS)/Integrated Systems Design and Dynamics (MS)**

The accelerated Applied Business and Technology - Applied Business (BS)/Integrated Systems Design and Dynamics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Integrated Systems Design and Dynamics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Integrated Systems Design and Dynamics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- COT 706 - Informatics and Technology Management **Credits: 3**
- COT 715 - Systems Project Management **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Applied Business and Technology - Technology Management (BS)/Integrated Systems Design and Dynamics (MS)

The accelerated Applied Business and Technology - Technology Management (BS)/Integrated Systems Design and Dynamics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Integrated Systems Design and Dynamics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.

- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Integrated Systems Design and Dynamics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- COT 706 - Informatics and Technology Management **Credits: 3**
- COT 715 - Systems Project Management **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Engineering Technology - Machine Learning and Autonomous Systems (BS)/Integrated Systems Design and Dynamics (MS)

The accelerated Accelerated Engineering Technology - Machine Learning and Autonomous Systems (BS)/Integrated Systems Design and Dynamics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Integrated Systems Design and Dynamics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.

- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Integrated Systems Design and Dynamics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- MLAS 650 - Autonomous Systems Architecture Studio **Credits: 3**
- MLAS 700 - Advanced Cybernetic Systems Development **Credits: 3**
- MLAS 750 - Autonomous Networking within Cyber-Physical Systems **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Graduate Certificate

Advanced Air Mobility Systems Graduate Certificate

The next milestone in the ongoing evolution of the aerospace sector will be the introduction of disruptive automated and autonomous technologies in crewed and uncrewed air traffic management systems, including innovative, sustainable, and intelligent aerial platforms to carry people and commodities. The Graduate Certificate in Advanced Air Mobility Systems is created to give students the knowledge and abilities they need to pursue a rewarding career in the emerging advanced air mobility (AAM) industry. Students will learn novel automated and intelligent autonomous solutions that will enable a safe, efficient, and integrated airspace where uncrewed aerial systems can fly alongside crewed aircraft.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- AAM 601 - Introduction to Advanced Air Mobility Systems **Credits: 1**
- AAM 605 - System Architectures in Advanced Air Mobility Systems **Credits: 2**
- AAM 732 - Aerospace Communication Systems **Credits: 3**
- AAM 762 - Guidance and Navigation Systems **Credits: 3**
- AAM 801 - Electromagnetic Threats and Mitigation Design for Advanced Air Mobility Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Cyber Human Systems Graduate Certificate

Cyber Human Systems integrate knowledge from a broad range of cybernetic sciences to design new computing systems to amplify humans' diverse physical and cognitive capabilities to accomplish individual and collective goals; assess the benefits, effects, and risks of computing systems; or understand how human, technical and contextual aspects of systems interact to shape those effects. The Graduate Certificate in Cyber Human Systems will allow students to understand and navigate advanced human-centered cybernetic and immersive systems. The Certificate will prepare students for cyber human systems thinking, emerging immersive technologies, cyber human systems project management, and advanced prototyping of interactive immersive environments.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- CYBR 780 - Design and Operations for Cyber Human Systems **Credits: 3**
- CYBR 782 - Social Computing Dynamics and Cyber Human Systems **Credits: 3**
- CYBR 783 - Interaction Design for Extended Reality Environments **Credits: 3**
- CYBR 801 - Prototyping for Advanced Immersive Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Machine Learning and Autonomous Systems Graduate Certificate

The Machine Learning and Autonomous Systems Graduate Certificate provides students with a comprehensive, advanced hands-on education focused on the design, development and deployment of machine learning and artificial intelligence frameworks within autonomous systems. Students will learn how to create autonomous systems that are cognitively-enabled using modern probabilistic programming languages. Students will be immersed in the fundamental theories of machine learning and the application of those theories leading to the operationalization of an autonomous systems framework.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student must:

- have a bachelor's degree or equivalent
- not be on probation
- have a cumulative grade point average (GPA) of 3.0 or higher
- meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee
- be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- MLAS 650 - Autonomous Systems Architecture Studio **Credits: 3**
- MLAS 700 - Advanced Cybernetic Systems Development **Credits: 3**
- MLAS 750 - Autonomous Networking within Cyber-Physical Systems **Credits: 3**
- MLAS 800 - Integrated Machine Learning and Autonomous Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Space Systems and Operations Graduate Certificate

The Graduate Certificate in Space Systems and Operations will allow students to understand space systems design and dynamics, operations, materials, and manufacturing in space environments. The Graduate Certificate will allow students to understand space operations in contested and open environments, vulnerabilities and threats to space systems, the physics and chemistry of the space environment including materials, modeling and simulation, manufacturing (on Earth and in space), and orbital mechanics, communications and spacecraft to support space missions in the civil and commercial space sectors. Additionally, this degree fully stacks into Salina's current Master of Science in Integrated Systems Design & Dynamics (ISDD).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- SSO 739 - Space Systems Design and Dynamics **Credits: 3**
- SSO 740 - Space Systems Modeling, Simulation, and Control **Credits: 3**
- SSO 742 - Manufacturing and Materials in Space and on Earth **Credits: 3**
- SSO 801 - Space Operations and Environment **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Spatial Computing Graduate Certificate

Systems theory, systems design, computer systems, machine learning, cybernetic systems, augmented reality, and virtual reality provide the foundation for the burgeoning field of Spatial Computing. In spatial computing, digital information is integrated seamlessly into the user's perception of the real world, enhancing their understanding and interaction with their environment. The ability to simulate, and operationally bind, the system dynamics of genuine systems using mathematical models or smaller-scale physical replicas allows researchers to explore system behavior in a detailed manner that is frequently either impractical or unsafe in the real world. Additionally, this graduate certificate fully stacks into K-State Salina's current Integrated Systems Design and Dynamics (MS).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

- A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.
- While not required, incoming students should have a computing principles background (at least 2 credit hours of computer programming at the undergrad level is helpful). Students who do not have an undergraduate course in computing principles are advised to take the following courses:
 - CMST 190 – Information Engineering for Data Science (1 credit hour)
 - CMST 290 – Scientific Programming for Machine Learning (1 credit hour)

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- CYBR 790 - Spatial Computing for Virtual Environments **Credits: 3**
- CYBR 793 - Computer Geometry for Modeling **Credits: 3**
- CYBR 795 - Machine Learning for Simulations **Credits: 3**
- CYBR 801 - Prototyping for Advanced Immersive Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Master of Science

Integrated Systems Design and Dynamics (MS)

The Integrated Systems Design and Dynamics graduate degree provides students with a senior level systems-based STEM education. Using technical cybernetics, the graduate degree is focused on the planning, architecture, design, and development of highly integrated machine learning systems, autonomous systems, aerospace systems, space systems, cybernetic systems, cyber and cyber-physical systems. Students will learn how to design and develop technologically complex systems using various integrative modeling and simulation techniques. Students will be immersed in the system dynamics discipline leading to the application of this framework towards the operationalization of complex technological systems across multiple domains.

Admission Requirements

Bachelor's degree with a 3.0 minimum GPA in the final two years or approximately the last 60 credit hours of undergraduate work. No GRE, or GMAT required.

Graduation Requirements

To be awarded a master's degree, the student (a) must have a bachelor's degree or equivalent, (b) must not be on academic probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Core Courses (14 credit hours)

- CYBR 601 - Introduction to Cybernetic Modeling and Simulation **Credits: 3**
- CYBR 603 - Integrated Systems Architecture **Credits: 3**
- CYBR 707 - Research Methods, Design, and Analysis **Credits: 5**
- CYBR 708 - Cybernetic Systems Design and Dynamics **Credits: 3**

Elective Courses (12 credit hours)

Pick a concentration.

Aerospace Systems

- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 744 - Aviation Human Factors Analysis and Design **Credits: 3**
- AVT 790 - Aerospace Topics **Credits: 3**
- COT 741 - Aerospace Manufacturing and Materials **Credits: 3**

Machine Learning & Autonomous Systems

- MLAS 650 - Autonomous Systems Architecture Studio **Credits: 3**
- MLAS 700 - Advanced Cybernetic Systems Development **Credits: 3**
- MLAS 750 - Autonomous Networking within Cyber-Physical Systems **Credits: 3**
- MLAS 800 - Integrated Machine Learning and Autonomous Systems **Credits: 3**

Aerospace Materials

- COT 741 - Aerospace Manufacturing and Materials **Credits: 3**
- SSO 735 - Electron Microscopy of Aerospace Materials **Credits: 3**
- SSO 736 - Aerospace Metallurgy and Ceramics **Credits: 3**
- SSO 738 - Advanced Composite Materials **Credits: 3**

Aerospace Cyber Defense

- CYBR 682 - Open Source Cyber Surveillance **Credits: 3**
- CYBR 684 - Advanced Topics in Cyber Data Fusion **Credits: 3**
- CYBR 751 - Cyber Defense Methods **Credits: 3**
- CYBR 760 - Aerospace Cybersecurity Studio **Credits: 3**

Systems Management

- COT 706 - Informatics and Technology Management **Credits: 3**
- COT 715 - Systems Project Management **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**
- CYBR 710 - Advanced Data Analytics for Cybernetic Systems **Credits: 3**

Systems Generalist

Student can also customize their elective selections. Pick four 600+ level COT, CYBR, MLAS, or SSO prefixed courses; or 500+ level IMSE courses. **Credits: 12**

Research Course, Thesis (6 credit hours)

3x2 Format

- COT 839 - Integrated Systems Thesis **Credits: 2**
- COT 839 - Integrated Systems Thesis - 2
- COT 839 - Integrated Systems Thesis - 2

Note: Once started, thesis courses must be taken in a connected semester sequence until completion.

Total Graduation Hours Required: 32

Aviation

Tysen Pina, Head

Kansas State University Salina
Aerospace and Technology Campus
2310 Centennial Road
Salina, KS 67401-8196

785-289-2650
salinaadmissions@k-state.edu

<https://www.salina.k-state.edu>

Accelerated

Accelerated Aeronautical Technology - Professional Pilot (BS)/Aeronautics (MS)

The accelerated Accelerated Aeronautical Technology - Professional Pilot (BS)/Aeronautics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Aeronautics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

**Admission Requirements for an ADP*

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Aeronautics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 707 - Research Methods **Credits: 3**
- COT 701 - Advanced Technical Communication **Credits: 3**

Graduation Requirements

**The Graduation Requirements below must be listed in the ADP Curriculum proposal*

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Graduate Certificate

Aerospace Certification Graduate Certificate

The Graduate Certificate in Aerospace Certification (GCAC) is designed to provide post-baccalaureate students employed in the aviation/aerospace industry, the requisite knowledge required to fulfill various professional roles within companies and organizations that span the industry. These include Aerospace Original Equipment Manufacturers (OEMs otherwise known as Tier I suppliers), Aerospace industry Tier II and Tier III suppliers, Aircraft Maintenance Repair and Overhaul Facilities (MROs), and other organizations. This certificate will provide these professionals a basic and intermediate level of understanding of the

FAA's product certification processes and continued airworthiness certification process along with supplemental certification processes and other regulatory requirements associated with bringing products to market in this industry. This knowledge is increasingly important as the industry moves to integrate novel technologies into the National Airspace System (NAS) such as Advanced Air Mobility (AAM) given the rapid rate of retirement of professionals with this level of knowledge.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Aeronautics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 722 - Aircraft Type Certification **Credits: 3**
- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 841 - Aerospace Safety Management Systems (SMS) **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Aerospace Cyber Operations Graduate Certificate

The graduate certificate program in UAS- Information Assurance is designed to provide both working professionals and graduate students a strong educational foundation and career potential in an increasingly important industry to both civilian and military organizations all over the United States. The market for Information Assurance jobs remains bright. The primary emphasis of the graduate certificate program is to prepare the workforce to understand the protection of UASs from cyber-attacks by negligent and hostile means and teaching Information Assurance risk assessment principles to practitioners involved with UAS operations on land, sea, air, or satellite platforms.

The program will be offered via K-State Online or face-to-face at K-State Polytechnic in eight-week segments in fall, spring, and summer semesters to meet the needs of both on-campus and off-campus learners. Courses are delivered using a course management system to provide an interactive, web-based classroom to students. Thus, the delivery of the certificate provides for occupational work demands and schedules. The Graduate Certificate in UAS – Information Assurance may be completed in one year. Two courses each in the fall and spring semesters and one course in the summer semester.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Course Requirements

Required Courses

- CYBR 680 - Cyber Systems and Risk Analysis **Credits: 3**
- CYBR 682 - Open Source Cyber Surveillance **Credits: 3**
- CYBR 684 - Advanced Topics in Cyber Data Fusion **Credits: 3**
- CYBR 686 - Risk Management for Cyber Operations **Credits: 3**
- CYBR 688 - Sense and Avoid Technologies in Aerospace Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Aerospace Safety Graduate Certificate

The Graduate Certificate in Aerospace (GCA) is designed to provide post-baccalaureate students employed in the aviation/aerospace industry, the requisite knowledge required to fulfill an organizational safety role for their employer in fulfillment of the recent FAA move to implement SMS (Safety Management Systems) system-wide in an effort to increase system safety levels. This knowledge is increasingly important as the industry moves to integrate novel technologies into the National Airspace System (NAS) such as Advanced Air Mobility (AAM).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Aeronautics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 790 - Aerospace Topics **Credits: 3**
- AVT 841 - Aerospace Safety Management Systems (SMS) **Credits: 3**
- COT 701 - Advanced Technical Communication **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Master of Science

Aeronautics (MS)

The Master of Science in Aviation degree is a 30 credit with 2-option degree that is designed to meet emerging needs of the aviation/aerospace industry. Further, each option has either a research thesis track for those who desire to continue their education to the Ph.D. or a non-thesis option for those who do not plan on continuing their education beyond the master's degree. The M.S. in Aeronautics is also designed to accommodate either the working professional or the traditional academic student with both distance and hybrid instruction models. In either option, students will learn both from experienced professors as well as from experienced industry professionals.

The Leadership/Policy option is aimed at those who wish to continue their professional education with an ultimate career objective of an executive leadership position in the aviation/aerospace sector. Within this option, students will examine and understand current industry issues from a strategic perspective with a focus on how to make the industry more resilient in an era of constrained resources and changing national priorities.

The Aerospace Certification option is designed for those who desire advancement in, or desire to enter the workforce in, either the aerospace manufacturing or continued airworthiness sectors. Students will experience in-depth study in the areas of airworthiness certification, production certification, lean six sigma, project management, safety management and others. This program will meet and exceed emerging industry standards for education and training in airworthiness certification.

Admission Requirements

As specified in the Graduate Handbook. Students with undergraduate backgrounds other than aviation or engineering will be admitted conditionally at the discretion of the admissions committee.

A 3.0 undergraduate G.P.A. on a 4.0 scale during the last 60 hours of coursework is required for admission.

Other material required for admission: Official undergraduate transcripts, 2 letters of recommendation and a letter expressing personal goals in the completion of this program.

Graduation Requirements

30 credit hours.

Course Requirements

The program of study for the MSA program requires 30 total credits to include the following:

Required courses for both options: 6 credit hours

- AVT 611 - Aircraft Regulation and Certification **Credits: 3**
- AVT 707 - Research Methods **Credits: 3**

Aerospace Certification Option: 15 credit hours

- AVT 703 - Project Management for Aerospace Professionals **Credits: 3**
- AVT 722 - Aircraft Type Certification **Credits: 3**
- AVT 734 - Advanced Aircraft Certification **Credits: 3**

- AVT 744 - Aviation Human Factors Analysis and Design **Credits: 3**
- AVT 841 - Aerospace Safety Management Systems (SMS) **Credits: 3**
- Technical Elective **Credits: 3**

Aerospace Leadership/Policy Option: 15 credit hours

- COT 704 - Managerial Finances, Metrics, and Analytics **Credits: 3**
- AVT 751 - Aerospace Policy **Credits: 3**
- AVT 771 - Leadership in the Aerospace Sector **Credits: 3**
- Technical Elective **Credits: 3**
- Technical Elective **Credits: 3**
- Technical Elective **Credits: 3**

Technical Electives

- AVT 703 - Project Management for Aerospace Professionals **Credits: 3**
- AVT 722 - Aircraft Type Certification **Credits: 3**
- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 744 - Aviation Human Factors Analysis and Design **Credits: 3**
- AVT 751 - Aerospace Policy **Credits: 3**
- AVT 790 - Aerospace Topics **Credits: 3**
- AVT 799 - Advanced Topics in Aeronautics **Credits: 3**
- COT 704 - Managerial Finances, Metrics, and Analytics **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**

Research: 3 credit hours

At least 3 credits from:

- AVT 838 - MSA Thesis **Credits: 1-6**
- OR
- AVT 836 - Master of Science in Aeronautics Capstone Project **Credits: 3** (non-thesis students)*

*Non-thesis students will need to enroll in one additional elective to reach 30 total hours.

No more than 9 credits of 600 level courses can be taken. Other technical courses may be substituted upon approval.
(15 credits)

Total Hours Required for Master's: 30

Integrated Studies

Troy Harding, Head

Kansas State University Salina
Aerospace and Technology Campus
2310 Centennial Road
Salina, KS 67401-8196

785-289-2650
salinaadmissions@k-state.edu

<https://www.salina.k-state.edu/>

Accelerated

Accelerated Applied Business and Technology - Applied Business (BS)/Integrated Systems Design and Dynamics (MS)

The accelerated Applied Business and Technology - Applied Business (BS)/Integrated Systems Design and Dynamics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Integrated Systems Design and Dynamics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Integrated Systems Design and Dynamics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- COT 706 - Informatics and Technology Management **Credits: 3**
- COT 715 - Systems Project Management **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.

- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Applied Business and Technology - Technology Management (BS)/Integrated Systems Design and Dynamics (MS)

The accelerated Applied Business and Technology - Technology Management (BS)/Integrated Systems Design and Dynamics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Integrated Systems Design and Dynamics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Integrated Systems Design and Dynamics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- COT 706 - Informatics and Technology Management **Credits: 3**
- COT 715 - Systems Project Management **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Accelerated Engineering Technology - Machine Learning and Autonomous Systems (BS)/Integrated Systems Design and Dynamics (MS)

The accelerated Accelerated Engineering Technology - Machine Learning and Autonomous Systems (BS)/Integrated Systems Design and Dynamics (MS) will provide high-performing undergraduates the opportunity to pursue an accelerated MS/Master of Science in Integrated Systems Design and Dynamics degree with early admission to the graduate program as well as the ability to count nine credit hours of coursework in their graduate program toward their undergraduate degree.

Admission Requirements

Undergraduate students applying for the accelerated program are required to have completed a minimum of 75 credit hours towards their bachelor degree. The following requirements must be met for admission into the accelerated program:

- The student must be seeking the bachelor's degree.
- The student must have completed a minimum of 75 credit hours toward the bachelor degree at the time of application for admission to the accelerated program.
- The student's cumulative undergraduate GPA must be at least 3.000.
- The student must meet all other Graduate School admission criteria as outlined in the Graduate School Handbook and any graduate program specific requirements.
- A student who has completed all coursework for the bachelor's degree is not eligible for the accelerated program.

Course Requirements

Integrated Systems Design and Dynamics (MS)

Overlapping Courses

Students may select up to 9 credits from the list of courses below to satisfy the requirements for both their undergraduate and graduate degrees. These courses should be listed at the 600-700 level.

- MLAS 650 - Autonomous Systems Architecture Studio **Credits: 3**
- MLAS 700 - Advanced Cybernetic Systems Development **Credits: 3**
- MLAS 750 - Autonomous Networking within Cyber-Physical Systems **Credits: 3**

Graduation Requirements

- After completion of all undergraduate program requirements, including the up to nine (9) overlapping graduate credit hours that are counted toward the bachelor's degree, the student must apply to be awarded the bachelor's degree.
- After receiving the bachelor degree, the student is eligible to be fully admitted into the master program portion of the accelerated bachelor-master program.
- To complete the second part of the accelerated program, the student must complete all master program requirements with a graduate cumulative GPA of at least 3.000.

Graduate Certificate

Advanced Air Mobility Systems Graduate Certificate

The next milestone in the ongoing evolution of the aerospace sector will be the introduction of disruptive automated and autonomous technologies in crewed and uncrewed air traffic management systems, including innovative, sustainable, and intelligent aerial platforms to carry people and commodities. The Graduate Certificate in Advanced Air Mobility Systems is created to give students the knowledge and abilities they need to pursue a rewarding career in the emerging advanced air mobility (AAM) industry. Students will learn novel automated and intelligent autonomous solutions that will enable a safe, efficient, and integrated airspace where uncrewed aerial systems can fly alongside crewed aircraft.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- AAM 601 - Introduction to Advanced Air Mobility Systems **Credits: 1**
- AAM 605 - System Architectures in Advanced Air Mobility Systems **Credits: 2**
- AAM 732 - Aerospace Communication Systems **Credits: 3**
- AAM 762 - Guidance and Navigation Systems **Credits: 3**
- AAM 801 - Electromagnetic Threats and Mitigation Design for Advanced Air Mobility Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Cyber Human Systems Graduate Certificate

Cyber Human Systems integrate knowledge from a broad range of cybernetic sciences to design new computing systems to amplify humans' diverse physical and cognitive capabilities to accomplish individual and collective goals; assess the benefits, effects, and risks of computing systems; or understand how human, technical and contextual aspects of systems interact to shape those effects. The Graduate Certificate in Cyber Human Systems will allow students to understand and navigate advanced human-centered cybernetic and immersive systems. The Certificate will prepare students for cyber human systems thinking, emerging immersive technologies, cyber human systems project management, and advanced prototyping of interactive immersive environments.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- CYBR 780 - Design and Operations for Cyber Human Systems **Credits: 3**
- CYBR 782 - Social Computing Dynamics and Cyber Human Systems **Credits: 3**
- CYBR 783 - Interaction Design for Extended Reality Environments **Credits: 3**
- CYBR 801 - Prototyping for Advanced Immersive Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Machine Learning and Autonomous Systems Graduate Certificate

The Machine Learning and Autonomous Systems Graduate Certificate provides students with a comprehensive, advanced hands-on education focused on the design, development and deployment of machine learning and artificial intelligence frameworks within autonomous systems. Students will learn how to create autonomous systems that are cognitively-enabled using modern probabilistic programming languages. Students will be immersed in the fundamental theories of machine learning and the application of those theories leading to the operationalization of an autonomous systems framework.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student must:

- a. have a bachelor's degree or equivalent
- b. not be on probation

- c. have a cumulative grade point average (GPA) of 3.0 or higher
- d. meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee
- e. be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- MLAS 650 - Autonomous Systems Architecture Studio **Credits: 3**
- MLAS 700 - Advanced Cybernetic Systems Development **Credits: 3**
- MLAS 750 - Autonomous Networking within Cyber-Physical Systems **Credits: 3**
- MLAS 800 - Integrated Machine Learning and Autonomous Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Space Systems and Operations Graduate Certificate

The Graduate Certificate in Space Systems and Operations will allow students to understand space systems design and dynamics, operations, materials, and manufacturing in space environments. The Graduate Certificate will allow students to understand space operations in contested and open environments, vulnerabilities and threats to space systems, the physics and chemistry of the space environment including materials, modeling and simulation, manufacturing (on Earth and in space), and orbital mechanics, communications and spacecraft to support space missions in the civil and commercial space sectors. Additionally, this degree fully stacks into Salina's current Master of Science in Integrated Systems Design & Dynamics (ISDD).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- SSO 739 - Space Systems Design and Dynamics **Credits: 3**
- SSO 740 - Space Systems Modeling, Simulation, and Control **Credits: 3**

- SSO 742 - Manufacturing and Materials in Space and on Earth **Credits: 3**
- SSO 801 - Space Operations and Environment **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Spatial Computing Graduate Certificate

Systems theory, systems design, computer systems, machine learning, cybernetic systems, augmented reality, and virtual reality provide the foundation for the burgeoning field of Spatial Computing. In spatial computing, digital information is integrated seamlessly into the user's perception of the real world, enhancing their understanding and interaction with their environment. The ability to simulate, and operationally bind, the system dynamics of genuine systems using mathematical models or smaller-scale physical replicas allows researchers to explore system behavior in a detailed manner that is frequently either impractical or unsafe in the real world. Additionally, this graduate certificate fully stacks into K-State Salina's current Integrated Systems Design and Dynamics (MS).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Integrated Systems Design & Dynamics at Kansas State University.

Admission Requirements

- A bachelor's degree, official transcripts for all undergraduate coursework (minimum 3.0 GPA required), official transcripts for all graduate coursework (if applicable), and a curriculum vitae. While not required, two letters of recommendation and highlighted industry experience can be used to improve an individual's application. GRE is not required.
- While not required, incoming students should have a computing principles background (at least 2 credit hours of computer programming at the undergrad level is helpful). Students who do not have an undergraduate course in computing principles are advised to take the following courses:
 - CMST 190 – Information Engineering for Data Science (1 credit hour)
 - CMST 290 – Scientific Programming for Machine Learning (1 credit hour)

Graduation Requirements

The student (a) must have a bachelor's degree or equivalent, (b) must not be on probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Required Courses

- CYBR 790 - Spatial Computing for Virtual Environments **Credits: 3**
- CYBR 793 - Computer Geometry for Modeling **Credits: 3**
- CYBR 795 - Machine Learning for Simulations **Credits: 3**
- CYBR 801 - Prototyping for Advanced Immersive Systems **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Master of Science

Integrated Systems Design and Dynamics (MS)

The Integrated Systems Design and Dynamics graduate degree provides students with a senior level systems-based STEM education. Using technical cybernetics, the graduate degree is focused on the planning, architecture, design, and development of highly integrated machine learning systems, autonomous systems, aerospace systems, space systems, cybernetic systems, cyber and cyber-physical systems. Students will learn how to design and develop technologically complex systems using various integrative modeling and simulation techniques. Students will be immersed in the system dynamics discipline leading to the application of this framework towards the operationalization of complex technological systems across multiple domains.

Admission Requirements

Bachelor's degree with a 3.0 minimum GPA in the final two years or approximately the last 60 credit hours of undergraduate work. No GRE, or GMAT required.

Graduation Requirements

To be awarded a master's degree, the student (a) must have a bachelor's degree or equivalent, (b) must not be on academic probation, (c) must have a cumulative grade point average (GPA) of 3.0 or higher, (d) must meet all the requirements of the Graduate School, the student's academic program area, and the student's supervisory committee, and (e) must be enrolled during the semester in which the degree requirements are completed.

Course Requirements

Core Courses (14 credit hours)

- CYBR 601 - Introduction to Cybernetic Modeling and Simulation **Credits: 3**
- CYBR 603 - Integrated Systems Architecture **Credits: 3**
- CYBR 707 - Research Methods, Design, and Analysis **Credits: 5**
- CYBR 708 - Cybernetic Systems Design and Dynamics **Credits: 3**

Elective Courses (12 credit hours)

Pick a concentration.

Aerospace Systems

- AVT 734 - Advanced Aircraft Certification **Credits: 3**
- AVT 744 - Aviation Human Factors Analysis and Design **Credits: 3**
- AVT 790 - Aerospace Topics **Credits: 3**
- COT 741 - Aerospace Manufacturing and Materials **Credits: 3**

Machine Learning & Autonomous Systems

- MLAS 650 - Autonomous Systems Architecture Studio **Credits: 3**

- MLAS 700 - Advanced Cybernetic Systems Development **Credits: 3**
- MLAS 750 - Autonomous Networking within Cyber-Physical Systems **Credits: 3**
- MLAS 800 - Integrated Machine Learning and Autonomous Systems **Credits: 3**

Aerospace Materials

- COT 741 - Aerospace Manufacturing and Materials **Credits: 3**
- SSO 735 - Electron Microscopy of Aerospace Materials **Credits: 3**
- SSO 736 - Aerospace Metallurgy and Ceramics **Credits: 3**
- SSO 738 - Advanced Composite Materials **Credits: 3**

Aerospace Cyber Defense

- CYBR 682 - Open Source Cyber Surveillance **Credits: 3**
- CYBR 684 - Advanced Topics in Cyber Data Fusion **Credits: 3**
- CYBR 751 - Cyber Defense Methods **Credits: 3**
- CYBR 760 - Aerospace Cybersecurity Studio **Credits: 3**

Systems Management

- COT 706 - Informatics and Technology Management **Credits: 3**
- COT 715 - Systems Project Management **Credits: 3**
- COT 720 - Application of Lean Six Sigma Methods **Credits: 3**
- CYBR 710 - Advanced Data Analytics for Cybernetic Systems **Credits: 3**

Systems Generalist

Student can also customize their elective selections. Pick four 600+ level COT, CYBR, MLAS, or SSO prefixed courses; or 500+ level IMSE courses. **Credits: 12**

Research Course, Thesis (6 credit hours)

3x2 Format

- COT 839 - Integrated Systems Thesis **Credits: 2**
- COT 839 - Integrated Systems Thesis - 2
- COT 839 - Integrated Systems Thesis - 2

Note: Once started, thesis courses must be taken in a connected semester sequence until completion.

Total Graduation Hours Required: 32

College of Veterinary Medicine

Bonnie Rush, Dean

Frank Blecha, Associate Dean

Peggy Schmidt, Associate Dean

Priscilla Roddy, Assistant Dean
Callie Rost, Assistant Dean

101 Trotter Hall
785-532-5660
Fax: 785-532-5884
vetmed@k-state.edu
<https://www.vet.k-state.edu/>

Veterinary Medical Library

The College of Veterinary Medicine has a well-equipped library that is a part of the Kansas State University libraries system. The general collection of books and journals encompasses veterinary medicine, basic biomedical sciences, and selected works in clinical medicine. The VM Library subscribes to approximately 875 journals and endeavors to subscribe to all English language veterinary medical titles. This is supplemented with core titles from human medicine, and selected subject areas representing faculty research interests, expertise, and teaching requirements.

Anatomy and Physiology

The mission of the Department of Anatomy and Physiology encompasses instruction, research and continuing education in the disciplines of gross and microscopic anatomy, cell and systemic physiology, pharmacology and neuroscience, all of which are central to the education of veterinarians for Kansas, to the education and training of graduate students for biomedical careers in teaching, research, and industry, and to the fulfillment of the University's mission to conduct basic and applied research important for the diagnosis and control of animal and human disease. The department has a fundamental role in acquiring new knowledge to further our understanding of animal and human physiology and pathophysiology. To maximize resources and foster collaborative interactions, the department has established four research focus groups: Cardiovascular and Pulmonary physiology, Immunophysiology, Neuroscience, and Pharmacology. In most cases, faculty have research interests that fall under more than one group. Research programs in these groups investigate their respective topics through integrating studies at the isolated tissue or cellular level to whole organ or animal function. Programmatic strengths of these groups include an actively shared system of well-equipped laboratories and excellent support personnel, mutually supportive technical and conceptual expertise, and interrelated but diverse extramural funding sources.

Career options available with an advanced degree in anatomy or physiology include academic positions in various animal and human health science-related institutions such as Colleges of Veterinary Medicine and Schools of Medicine and Dentistry, as well as positions in industry and agribusiness. For information on graduate work, courses, and faculty, please see Anatomy and Physiology.

Clinical Science

Quality graduate education is a priority for the Department of Clinical Sciences. Strong basic and applied research programs enhance the teaching and service commitments. Most of the Clinical Sciences faculty dedicate significant time and effort to research initiatives. Research collaboration is readily available to Clinical Sciences faculty, both within the College (Departments of Anatomy and Physiology and Pathobiology) as well as throughout the University. Traditional research partners have been the Departments of Animal Science and Industries, Biochemistry, Dairy Sciences, Meat Sciences and the Center for Basic Cancer Research in the Division of Biology. These alliances provide a broad range of expertise that can be drawn on to answer basic and applied research questions.

Clinical Sciences is one of the disciplinary foci of the Masters of Veterinary Biomedical Sciences Degree. Many graduate students seeking a Masters with a focus in clinical sciences are also enrolled in clinical residency training programs or a dual

degree (DVM-MS) program. Doctoral training opportunities are available to Clinical Sciences faculty and their candidates contingent upon faculty membership in, and collaborative relationships with, the graduate faculties of the Pathobiology, Anatomy and Physiology, and Animal Science and Industries programs.

For more information on graduate work, courses, and faculty, see Clinical Sciences.

Pathobiology

The Department of Diagnostic Medicine/Pathobiology includes faculty involved in the study of the epidemiology, diagnosis, pathogenesis, and prevention/control of infectious and parasitic diseases of animals and humans. In addition, the Department has faculty with expertise in topics related to food safety and security, public health and zoonosis. Opportunities exist for advanced graduate work after the Master's degree include the Doctor of Philosophy degree in the areas of bacterial and viral pathogenesis, clinical and anatomic pathology, epidemiology, immunology, parasitology, toxicology, and food safety and security.

The Pathobiology graduate program of the Department is a multi-disciplinary program. It is sufficiently diverse to provide the critical mass and cross-disciplinary interactions necessary to offer high quality graduate training, yet focused enough to avoid dilution of resources and conflicts with other graduate program. The scope and flexibility of the graduate program is a notable strength. The diversity of academic programs and broad expertise of the faculty provide opportunities for cross-disciplinary interaction. As such supervisory committees for the graduate students can custom design graduate training programs which address the interests of individual students. Collectively, the faculty in the Pathobiology Graduate Program has a history of successful extramural funding from both federal and industry sources to support graduate training programs and produce research which results in scientific publications of high quality. Many of our graduates have become successful researchers in academia, pharmaceutical and biological industries, private veterinary practice, federal agencies and diagnostic labs. The graduates have also been highly competitive for high quality postdoctoral research positions which allow them to continue their research training.

The Diagnostic Laboratory, housed in the Department, was established in 1961 and is fully accredited by the American Association of Veterinary Diagnostic Laboratory Diagnosticians. The laboratory has more than 50 employees who provide services to the veterinary teaching hospital, veterinary profession and animal industries of Kansas and surrounding states. The Diagnostic Laboratory is internationally recognized for its diagnostic capabilities for many important diseases of food and companion animals. Laboratories and support staff address all aspects of diagnosis from necropsy and histopathology, clinical pathology, serology, toxicology and infectious agents detection. Annual submissions to the laboratory exceed 100,000. Residency training in anatomic and clinical pathologist is fully integrated into the service activities of the laboratory. The Department houses the internationally recognized rabies laboratory that provides rabies diagnostic services for both humans and animals. The laboratory also provides information regarding disease occurrence for public health agencies, Federal and State regulatory officials, and the animal industry.

For information on graduate work, courses, and faculty, please see Diagnostic Medicine/Pathobiology.

Programs offered

Doctor of Veterinary Medicine

Veterinary Medicine (DVM)

Doctor of Philosophy

Pathobiology (PHD)

Physiology (PHD)

Master of Science

Veterinary Biomedical Science (MS)

Master of Public Health

Master of Public Health (MPH)

Graduate Certificate

Stem Cell Biotechnology Graduate Certificate

Professional DVM Certificate

Food Animal Veterinary

Doctor of Veterinary Medicine

Veterinary Medicine (DVM)

Admission

Enrollment in the College of Veterinary Medicine is limited to qualified students who have completed the minimum 64 required hours of pre-professional courses (see pre-professional requirements at <https://www.vet.k-state.edu/admissions/requirements/>). To be eligible for consideration to the professional program leading to a Doctor of Veterinary Medicine, a student must first complete the pre-professional requirements with a minimum 2.800 average GPA (on an A = 4 point basis) in an accredited college or university, and a minimum 2.800 average GPA in the last 45 semester hours of undergraduate work.

Personal interviews are required of all students admitted. Selection is based upon academic achievement and professional potential as determined by the interview with the Admissions Committee. Applicants are evaluated on such items as motivation, maturity, communication skills, experience with and knowledge of animals, and experience with and knowledge of veterinary medicine. Therefore, all students interested in applying to the College of Veterinary Medicine are encouraged to have adequate animal exposure and to have work experience related to veterinary medicine to demonstrate to the Admissions Committee an understanding of the profession. Because veterinary medicine is so diverse, it is advisable to become acquainted with several areas of practice as well as with veterinarians in industry, public health and research.

Applicants must apply through VMCAS <http://www.aavmc.org> and also **must** complete the KSU supplemental application. Additional application details are available at <https://www.vet.k-state.edu/admissions/apply/>.

KSU supplemental applications must be completed online, printed and mailed along with a nonrefundable \$50 processing fee. Applicants must request all transcripts and GRE scores be sent to: Admissions, College of Veterinary Medicine, 101 Trotter Hall, Manhattan, KS 66506. A complete application consists of the VMCAS application, KSU supplemental application, transcripts from all Colleges/Universities attended, and a non-refundable application fee made payable to College of Veterinary Medicine by October 1.

All inquiries can be addressed to the following address:

Associate Dean for Admissions
College of Veterinary Medicine
101 Trotter Hall
Kansas State University
Manhattan, KS 66506-5601
admit@vet.ksu.edu
(785) 532-5660

Fees for veterinary medical students

College of Veterinary Medicine fees are higher than undergraduate fees. Since these are determined annually, contact the Office of the Associate Dean for current fees.

Course Requirements

Year 1 Fall: 20 credit hours

- VAP 805 - Cell Physiology **Credits: 3**
- VAP 806 - Gross Anatomy I **Credits: 6**
- VAP 807 - Veterinary Systems 1 **Credits: 6**
- VAP 808 - Introduction to Veterinary Medicine and Biomedical Research: Concepts and Values **Credits: 1**
- VAP 835 - Animal Care and Welfare **Credits: 1**
- VCS 809 - Veterinary Clinical and Professional Skills I **Credits: 1**
- VDMP 800 - Veterinary Career Development **Credits: 0**
- Electives **Credits: 2**

Year 1 Spring: 20 credit hours

- VAP 816 - Gross Anatomy II **Credits: 5**
- VAP 817 - Veterinary Systems 2 **Credits: 4**
- VCS 816 - Veterinary Clinical Skills and Professional Skills II **Credits: 1**
- VDMP 811 - Clinical Pathology I **Credits: 2**
- VDMP 814 - Veterinary Bacteriology & Mycology **Credits: 3**
- VDMP 817 - Principles of Veterinary Immunology **Credits: 3**
- VDMP 818 - Veterinary Epidemiology **Credits: 2**
- Electives **Credits: 1**

Year 2 Fall: 21 credit hours

- VAP 844 - Veterinary Pharmacology I **Credits: 4**
- VCS 839 - Veterinary Clinical and Professional Skills III **Credits: 1**
- VDMP 831 - Veterinary Virology **Credits: 3**
- VDMP 832 - General Pathology **Credits: 4**
- VDMP 834 - Veterinary Parasitology **Credits: 4**
- VDMP 835 - Clinical Pathology II **Credits: 3**
- Electives **Credits: 2**

Year 2 Spring: 21 credit hours

- VAP 846 - Veterinary Pharmacology II **Credits: 2**
- VCS 843 - Introduction to Veterinary Surgery **Credits: 2**
- VCS 844 - Medicine I **Credits: 4**
- VCS 845 - Radiology **Credits: 3**
- VCS 846 - Veterinary Clinical and Professional IV **Credits: 1**

- VDMP 841 - Veterinary Public Health **Credits: 2**
- VDMP 857 - Systemic Pathology **Credits: 5**
- Electives **Credits: 2**

Year 3 Fall: 21 credit hours

- VCS 861 - Food Animal Medicine **Credits: 4**
- VCS 862 - Theriogenology **Credits: 3**
- VCS 863 - Veterinary Surgery I **Credits: 3**
- VCS 864 - Applied Clinical Skills and Surgical Laboratories **Credits: 3**
- VCS 865 - Exotic Pet Medicine **Credits: 2**
- VCS 867 - Medicine II **Credits: 4**
- Electives **Credits: 2**

Year 3 Spring: 20 credit hours

- VAP 871 - Toxicology **Credits: 3**
- VCS 874 - Ethics and Jurisprudence **Credits: 1**
- VCS 877 - Clinical Nutrition **Credits: 2**
- VCS 876 - Applied Large Animal Clinical Skills **Credits: 1**
- VCS 878 - Veterinary Surgery II **Credits: 3**
- VCS 879 - Veterinary Surgery II Laboratory **Credits: 1**
- VCS 880 - Veterinary Business and Professional Development **Credits: 1**
- VCS 881 - Clinical Pharmacology **Credits: 2**
- VCS 882 - Equine Medicine **Credits: 3**
- Electives **Credits: 3**

Year 4 Summer, Fall, Spring: 45 credit hours

- VCS 900 - Veterinary Radiology and Diagnostic Imaging **Credits: 3**
- VCS 904 - Clinical Anesthesia **Credits: 3**
- VCS 906 - Ophthalmology **Credits: 2**
- VCS 910 - Livestock Local Practice **Credits: 2**
- VCS 912 - Livestock Medicine and Surgery **Credits: 2**
- Must take 4 credit hours of equine courses:
- VCS 920 - Equine Medicine **Credits: 2**
- VCS 922 - Equine Surgery **Credits: 2**
- VCS 924 - Equine Field Service **Credits: 2**
- VCS 930 - Small Animal Internal Medicine **Credits: 3**
- VCS 932 - Small Animal General Medicine **Credits: 3**
- VCS 934 - Clinical Small Animal Soft Tissue Surgery **Credits: 3**
- VCS 936 - Clinical Small Animal Orthopedic Surgery **Credits: 3**
- VCS 938 - General Dentistry **Credits: 1**
- VCS 940 - Small Animal Emergency Rotation **Credits: 2**
- VDMP 902 - Diagnostic Medicine **Credits: 2**
- Rotational electives **Credits: 11**

Total: 169 credit hours

Graduate Certificate

Stem Cell Biotechnology Graduate Certificate

Contact: Duane Davis
Email: davis@ksu.edu

The certificate is offered through the College of Veterinary Medicine. The overarching purpose of the certificate program is to add value to other degrees in the biological and life sciences, specifically including animal sciences, veterinary medicine, biology and biochemistry.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

Students with graduate standing and a 3.0 GPA in a field in the biological sciences or with a cumulative GPA of 3.0 or higher in the DVM curriculum are eligible to enroll. Exceptions are possible upon approval by the coordinator in consultation with the faculty.

Fifteen hours are required. The core courses are designed to ensure a benchmark level of knowledge about stem cell biotechnology.

Elective courses are intended to allow for: (1) specific advancement toward research competence in the field or (2) commercialization of stem cell and related technology.

Courses in the certificate may be included in graduate programs upon approval of the student's major professor and advisory committee. Inclusion of courses from other institutions and programs may be substituted for credit in the certificate in stem cell biotechnology with the approval of the program director in consultation with associated faculty.

Course Requirements

Required Courses

- AP 711 - Stem Cells and Comparative Biomedicine **Credits: 2**
- AP 850 - Stem Cell Techniques **Credits: 2**
- ASI 802 - Gametes, Embryos, and Stem Cells in Farm Animals **Credits: 2**
- ASI 902 - Topics in Animal Science **Credits: 1-6**
-May be taken either two or three times.

Elective Courses

Any three of the remaining courses qualify for the remaining credit hour requirements.

- AP 995 - Problems in Physiology **Credits: 1-18**
- ASI 600 - Applied Animal Biotechnology **Credits: 3**

- ASI 961 - Graduate Problem in Animal Sciences and Industry Credits: 1-18
- BIOL 510 - Developmental Biology Credits: 3
- BIOL 670 - Immunology Credits: 3
- BIOL 671 - Immunology Lab Credits: 2
- BIOL 705 - Eukaryotic Genetics Credits: 3
- BIOL 707 - Advanced Cell Biology Credits: 3
- BIOL 886 - Confocal, Fluorescence and Light Microscopy Credits: 3
- DMP 817 - Principles of Veterinary Immunology Credits: 3
- DMP 850 - Immunology of Domestic Animals Credits: 3
- DMP 878 - Applications of Flow Cytometry Credits: 1-3
- GRAD 820 - Leadership Practicum Credits: 3
- MANGT 845 - Technology Entrepreneurship and Strategy Credits: 3
- PLPTH 610 - Biotechnology Credits: 3

Total Hours Required for Graduate Certificate: 15

Anatomy and Physiology

Johann Coetzee, Head

Peying Fong, Director of graduate studies

228 Coles Hall

785-532-5666

ap@vet.ksu.edu

<http://www.vet.ksu.edu/academics/anatomy-physiology/index.html>

Program of study

The Department of Anatomy and Physiology offers opportunities for graduate studies leading to both M. S. (Veterinary Biomedical Science) and Ph.D. degrees. Cell and systemic physiology, immunophysiology, neuroscience, and pharmacology are the major themes of research of the department. Specific areas of interest include comparative exercise physiology, food animal immunophysiology, molecular biology of membranes, molecular genetics and gene mapping and expression, neural control of cardiovascular function, ion channel structure and function, and transport processes and pathophysiology of microcirculation. Faculty from other departments comprise a strong ancillary support group. Career options available with an advanced degree in anatomy or physiology include academic positions in various animal and human health science-related institutions such as Colleges of Veterinary Medicine and Schools of Medicine and Dentistry, as well as positions in industry and agribusiness.

Admissions

To be admitted with full standing, the applicant must have an average of B or better in the junior and senior years, a bachelor's or veterinary medical degree from an approved institution, and adequate undergraduate preparation in the proposed field.

For the Ph.D. degree, 90 semester hours of graduate study beyond the bachelor's degree are required, including at least 30 hours of research. For DVM candidates, if 12 hours of dual credit has not been applied to the master of science degree, it may be applied toward the Ph.D.

Application procedure

See Veterinary Medicine in this catalog for additional information. Applications are considered on a rolling basis. Teaching and research assistantships are awarded on the basis of merit and availability, using many of the same criteria used for admission decisions. Interested students are encouraged to peruse the departmental website <http://www.vet.ksu.edu/depts/ap>. All students offered admission are considered for financial support.

Additional Programs of Interest

Stem Cell Biotechnology Graduate Certificate

The overarching purpose of the certificate program is to add value to other degrees in the biological and life sciences, specifically including animal sciences, veterinary medicine, biology and biochemistry. For additional information, please see the Stem Cell Biotechnology Graduate Certificate catalog page.

Veterinary Biomedical Science

The Masters of Veterinary Biomedical Science Degree is a College of Veterinary Medicine -based program leading to an MS degree. Graduate study may be inter-disciplinary or focused in one of the three participating disciplines: Anatomy & Physiology; Clinical Sciences; Pathobiology. Each student's program will be designed by his/her supervisory committee to support the student's thesis project, educational and career goals. For additional information, please see the Veterinary Biomedical Science catalog page.

Doctor of Philosophy

Physiology (PHD)

The Department of Anatomy and Physiology offers opportunities for studies leading to a Doctor of Philosophy degree. Cell and systemic physiology, immunophysiology, neuroscience, and pharmacology are the major themes of research of the department. Their specific areas of interest include: biomedical applications for nanomedicine and drug delivery, comparative exercise physiology, food animal immunophysiology, molecular biology of membranes, molecular genetics and gene mapping and expression, neural control of cardiovascular function, ion channel structure and function, transport processes and pathophysiology of microcirculation.

Admission Requirements

Course Requirements

- Minimum 3 years, 2 semesters/years
- Equivalent of 90 semester hours
- Dissertation representing minimum 30 hours research (AP 999 - Research in Physiology)

Students with a BS Degree

At least 90 semester hours of credits including a minimum of 15 hours of formal course work (800-level or higher) and 30 hours of research credits for the dissertation, a preliminary examination, research, a written dissertation, and a satisfactory defense of the dissertation at the final oral examination.

Students with a MS Degree

A maximum of 30 hours from a master's degree can count toward the 90 credits required for the doctoral degree, if the supervisory committee decides that the course work is relevant to the doctoral program. The additional 60 credits must include a minimum of 15 hours of formal course work (800-level or higher) and 30 hours of research credits for the dissertation (AP 999 - Research in Physiology), a preliminary examination, research, a written dissertation, and a satisfactory defense of the dissertation at the final oral examination.

Students with a DVM Degree or in a Dual DVM/PhD Degree Program

At least 90 semester hours of credits including a minimum of 15 hours of formal course work (800-level or higher) and 30 hours of research credits for the dissertation (AP 999 - Research in Physiology), a preliminary examination, research, a written dissertation, and a satisfactory defense of the dissertation at the final oral examination. Students who hold professional doctorate degree (DVM, MD, etc.) degree or enrolled in a dual DVM/PhD program may transfer a maximum of 30 graduate credit hours from a professional doctorate degree toward the doctorate program of study. For students who do not have a bachelor's degree or not yet earned a bachelor's degree and are enrolled in the dual degree (DVM/PhD) program, the doctoral degree shall be awarded concurrently with the DVM or after the completion of the DVM degree.

Required Courses: 11+ credit hours

- **AP 803 - Seminar Credits: 1**
One hour each semester, 3 credit hours
- **AP 896 - Introduction to Responsible Conduct of Biomedical Research Credits: 2**
One statistics course, choose one:
- **STAT 701 - Fundamental Methods of Biostatistics Credits: 3**
- **STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3**
At least 3 hours of graduate physiology courses, examples:
- **AP 737 - Introduction to Cell Physiology Credits: 2**
- **AP 743 - Systems Physiology Credits: 4**
- **AP 805 - Cell Physiology Credits: 3**
- **AP 807 - Integrated Physiological Systems 1 Credits: 5-6**
- **AP 817 - Integrated Physiological Systems 2 Credits: 3-4**

Tracked Courses: 6-15 credit hours

All Ph. D. students are required to complete one of the following tracks:

Anatomy Track (11 hours)

- a. AP806 – Gross Anatomy I, 6 hours
- b. AP816 – Gross Anatomy II, 5 hours

Physiology Track (11 hours)

- a. AP805 -- Cell Physiology, 3 hours
- b. AP807 -- Systems I, 5 hours

c. AP817 -- Systems II, 3 hours

Pharmacology Track (6 hours)

a. AP844 – Pharmacology I, 4 hours

b. AP846 – Pharmacology II, 2 hours

Toxicology Track (15 hours)

a. BIOCH755 – Biochemistry I, 3 hours

b. BIOCH765 – Biochemistry II, 3 hours

c. AP845 – Toxicology, 2 hours

d. AP802 – Advanced Toxicology, 3 hours

e. AP830 – Toxins in the Biological System, 2 hours

f. AP831 – Current Topics in Toxicology, 2 hours

Animal Welfare Track (9 hours)

a. AP835 – Animal Care and Welfare, 1 hour

b. AP855 – Observing and Analyzing Animal Behavior, 1 hour

c. AP897 – Problems in Animal Welfare, 1 hour

d. DMP815 – Multidisciplinary Thought and Presentation, 3 hours

e. CS830 – Design and Interpretation of Clinical Trials, 3 hours

Anatomy Track (11 hours)

- AP 806 - Gross Anatomy I **Credits: 6**
- AP 816 - Gross Anatomy II **Credits: 5**

Physiology Track (11 hours)

- AP 805 - Cell Physiology **Credits: 3**
- AP 807 - Integrated Physiological Systems 1 **Credits: 5-6**
- AP 817 - Integrated Physiological Systems 2 **Credits: 3-4**

Pharmacology Track (6 hours)

- AP 844 - Pharmacology I **Credits: 4**
- AP 846 - Pharmacology II **Credits: 2**

Toxicology Track (15 hours)

- BIOCH 755 - Biochemistry I **Credits: 3**
- BIOCH 765 - Biochemistry II **Credits: 3**
- AP 830 - Toxins in the Biological System **Credits: 2**
- AP 831 - Current Topics in Toxicology **Credits: 2**
- AP 871 - Toxicology **Credits: 3**

Advanced Toxicology **Credits / Units: 3**

Animal Welfare Track (9 hours)

- AP 835 - Animal Care and Welfare Credits: 1
- AP 855 - Observing and Analyzing Animal Behavior Credits: 1
- AP 897 - Problems in Animal Welfare Credits: 1
- CS 830 - Design and Interpretation of Clinical Trials Credits: 3
- DMP 815 - Multidisciplinary Thought and Presentation Credits: 3

Elective Courses: 13-16 credit hours

As appropriate; consult with major professor and Supervisory Committee.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Clinical Sciences

Dr. Brian Lubbers, Interim Department Head

T.G. Nagaraja, Program Director

A-111D Mosier Hall

785-532-4890

Fax: 785-532-2252

krdrew@ksu.edu

<https://www.vet.k-state.edu/academics/clinical-sciences/>

About the department

The Department of Clinical Sciences offers a graduate program leading to the Master of Science (Veterinary Biomedical Science) degree. Graduate work in clinical sciences may be pursued in several fields of specialization including agricultural practice, anesthesiology, equine medicine and surgery, oncology, exotic and wildlife medicine, ophthalmology, radiology, small animal medicine, small animal surgery, and theriogenology. The department, along with the Veterinary Health Center at Kansas State University, has modern facilities and equipment for both basic and applied studies.

The primary goal of graduate study programs in clinical medicine is to prepare students for careers in teaching and research in a clinical specialty area. After completing graduate work, the student will be better prepared to conduct research both independently and as a team member. Adequate training in planning research projects and writing research proposals will give the student the ability to function with teams of scientists from the biomedical field. The student's experience in clinical teaching and literature study will form the basis for development of future teaching programs within his or her discipline.

A residency program designed to prepare and qualify a veterinarian for specialty boards recognized by the AVMA is usually combined with the graduate program. While a graduate program can be accomplished in a shorter period of time, the duration of combined programs is usually three years. This reflects the minimum time required to satisfy the objectives of each program. Details of an individual residency program can be obtained from the Director of the Veterinary Health Center at Kansas State University. An individually tailored graduate program concurrent with professional veterinary school or for non-DVM applicants can be arranged on an individual basis.

Admission Requirements

In order to be considered for admission, the applicant must FIRST identify, contact, and be accepted by a graduate faculty member within Clinical Sciences. Once the student has been accepted by a graduate faculty mentor, the student should submit the application online.

Admission will follow deadlines set forth by the Kansas State University Graduate School.

Continued Enrollment Requirements

Applicants for graduate study must have a minimum grade average of B. Applicants currently enrolled in the professional veterinary curriculum or those holding a baccalaureate degree will be considered on an individual basis.

A student who has less than a B average, based on individual merit, may be admitted on probationary status. Full standing is attained automatically upon completion of at least 9 hours of course work for graduate credit with grade of B or better and upon the removal of any deficiency which was specified at the time of admission. International students must have a health certificate and an acceptable score on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

A graduate student may be denied continued enrollment in the university for any of the following reasons:

1. Failure of a student on probation as a condition of admission to achieve a minimum cumulative GPA of 3.0 in the first 9 credit hours of graduate level coursework.
2. Failure of a student placed on probation for deficient grades to achieve a cumulative GPA of at least 3.0 within 2 semesters for full-time students and within 12 credit hours for part-time students.
3. Failure to meet published departmental or University requirements.
4. Failure to maintain satisfactory progress toward a graduate degree.
5. Failure in the final degree examination(s).
6. Failure to acquire mastery for the methodology and content in a field sufficient to complete a successful thesis or dissertation.
7. Qualifying for placement on probation a second time, except when the first period of probation is a condition of admission or when the second period is a condition of reinstatement.
8. A recommendation for suspension or expulsion by the Honor Council.

Veterinary Medicine Certificate

Equine Veterinary Practice DVM Certificate

The Equine Veterinary Practice Certificate (EVPC) program is designed for current Doctor of Veterinary Medicine (DVM) students. The objectives of the EVPC are to prepare DVM students with the necessary skills to become proficient equine practitioners. This will be accomplished by incorporating skills in varied areas including equine general and preventative medicine, internal medicine, reproduction, surgery, lameness evaluation, practice experience and client communication. Through exposure to these diverse experiences, students will have the opportunity to learn and actively engage with equine-related matters, thereby increasing their self-confidence and knowledge in this field. This program is designed to enhance technical and procedural skills, knowledge base, practical business and personal life management, and client communication skills, ultimately providing veterinary graduates with a comprehensive foundation for a successful career in equine veterinary practice that begins the day they graduate.

Admission Requirements

Must be admitted to the DVM program at Kansas State University

Graduation Requirements

1. The certificate program will require that students complete 12 credits. All courses are elective courses within the DVM curriculum
2. Procedure log: Complete a list of required and optional skills and procedures (50 total outlined in Appendix 1) to master in preclinical years and fourth year. Performing clinical skills is an imperative and large component of the overall program, and students in the EVPC should be able to demonstrate competency in performing a large variety of core clinical skills to faculty instructors or externship/mentorship DVM mentors. The purpose of a procedure log is to ensure graduates are ready to perform general skills in practice competently and proficiently either with or without supervision.
- 3.3. College-wide seminar presentation during VCS 923 Advance Equine Studies: Students will present a 15 minute seminar on a pre-approved topic with their CVM faculty advisor. Options for topics include a case and/or disease discussion, in-depth "how to" perform procedures or skills and the application of these skills, practice tips learned and how they will apply those tips, business principles and plan, or others. The goal of this seminar presentation requirement is for students to research a particular area of equine veterinary practice as well as practice their communication skills. This type of communication skill will be useful in equine veterinary practice for not only communicating with veterinary colleagues but also for client education seminars.
4. Client education materials: Create an e-newsletter targeted towards horse owners and clients focusing on topics related to general and preventative medicine, internal medicine, surgery or lameness, theriogenology, or other relevant areas. The purpose of this requirement is to ensure that graduates are able to communicate with clients and horse owners in a clear manner using lay terminology. This will also provide graduates with a start to their client education materials portfolio.
5. Organized veterinary medicine: Be a member of at least one of the listed equine veterinary professional or student associations. The purpose of this requirement is to be involved in organized veterinary medicine and gain networking skills. It will also provide students with avenues for future continuing education and life-long learning skills as well as resources for maintaining health and self-care while staying involved and satisfied in a long-term career in equine veterinary practice.

American Association of Equine Practitioners (AAEP)

Student Chapter of the American Association of Equine Practitioners (SCAAEP)

KSU Guiding Wildcats into Future Equine Vets (FEV)

Starting Gate with Dr. Amy Grice

Kansas Equine Practitioners group

Required Courses (7 credit hours)

Course	Year(s) Offered
VCS 892 - Pre-Clinical Mentorships – Exotic Animal/Zoological Medicine Emphasis Credits: 1	1st/2nd/3rd
VCS 921 - Clinical Equine Theriogenology Credits: 2	4th
VCS 923 - Advanced Equine Studies Credits: 4	4th

Elective Courses (5 credit hours)

Course	Year(s) Offered
VCS 891 - Learning Curve of Equine Practice Credits: 1	1 st , 2 nd , 3 rd
VCS 891 - Topics Equine Podiatry Credits: 1	3 rd
VCS 892 - Equine Lameness Credits: 1	3 rd
VCS 891 - Equine Medicine Elective Credits: 1	3 rd
VCS 901 - Externship-Dodge City Rodeo Credits: 1	4 th
VCS 901 - Externship-Equine Emphasis Credits: 1	4 th
VCS 901 - Supplemental Equine Studies Credits: 2	4 th
VCS 925 - Supplemental Equine Studies Credits: 2	4 th

Total Credits Required: 14

Exotic Animal/Zoological Medicine DVM Certificate

The Exotic Animal/Zoological Medicine Veterinary Certificate (EAZMVC) program is for current Doctor of Veterinary Medicine (DVM) students at the College of Veterinary Medicine, Kansas State University. The goal of the EAZMVC is to prepare DVM students for long term success in the field of exotic animal and zoological (which, for this document, includes wildlife) medicine by incorporating skills of varied areas that include: captive management/husbandry, physical examination, ability to obtain detailed patient histories, manual and chemical restraint, knowledge of a broad-range of diagnostic procedures, understanding basic disease processes, veterinary care/animal health, preventive medicine, and the ability to adapt a student's knowledge and experience to a broad-range of species. Achieving this goal will result in a veterinary graduate with a well-rounded foundation for a career in exotic animal and zoological medicine.

Students interested in participating/enrolling in the EAZMVC program should submit a plan (preferably during the first year) to the EAZMVC faculty committee. The plan should be based on the guidelines outlined in this catalog entry.

Required Courses (8 credit hours + 1 zero credit enrollment)

All courses in the EAZMVC program are elective courses within the DVM curriculum. Students in the EAZMVC must take 8 credit hours in the required elective courses (outlined below) and 6 credit hours in select elective courses (outlined below), and must obtain 50 points (pt) in the list of other training opportunities (outlined below).

Course	Year(s) Offered
VCS 892 - Pre-Clinical Mentorships – Exotic Animal/Zoological Medicine Emphasis Credits: 1	1st/2nd/3rd
VCS 891 J - Topics in Advanced Zoological/Wildlife Medicine Credits: 1	3rd
VCS 891 O - Topics in Advanced Exotic Pet Medicine	3rd

Course	Year(s) Offered
VCS 905 - Exotic Animal, Wildlife, and Zoo Animal Medicine Clinical Rotation* Credits: 3	4th
VCS 901 - Externships – Exotic Animal/Zoological Medicine Emphasis Credits: 2	4th
VCS 901 - Externship/Programmed Study** Credits: 0	4th

* Because VCS 905 is considered a required course for students enrolled in the EAZMVC program, this course, when ranking, does not count as one of the 4th-year elective choices.

** Students must enroll in the zero (0) credit option of VCS 901 during the 4th-year as verification that the 50 points of training opportunities have been completed and recognized.

Elective Courses (6 credit hours)

Course	Year(s) Offered
VAP 891 - Special Interest Anatomy Credits: 1 (Note: topic must be related to our specialty)	1st, 2nd
VCS 760 - Topics in Global Veterinary Medicine Credits: 1	1st, 2nd
VDMP 804 - Ecotoxicology Credits: 1	2nd
VDMP 891 - Laboratory Animal Science Credits: 2	2nd, 3rd
VDMP 891 C - Backyard Chicken Diseases Credits: 1	3rd
VCS 901 - Externships – Exotic Animal/Zoological Medicine Emphasis* Credits: 1-4	4th
VCS 903 - Laboratory Animal Medicine Clinical Rotation Credits: 2 (Note: only 2 students are on at one time; only 5-7 blocks are offered; VDMP 891 is a prerequisite)	4th

These are in addition to the credit hours listed under "required courses."

Special Requirements

Students in the EAZMVC program will also have to complete a number of other training opportunities; ideally, these will align with their specific areas of interest in exotic animal/zoological medicine; 50 points (pt) required. Once 50 points have been awarded, the student will be enrolled in VCS 901 (Clinical Externship and/or Programmed Study) for 0 credit status (no financial cost).

- Actively participate as an officer or by attending 75% of the meetings in the KSU Exotic Animal Medicine Club (EAMC) (5 pt)
- Actively participate as an officer or by attending 75% of the meetings in the KSU Avian Medicine Club (5 pt)
- Actively participate in the KSU EAMC's Herpetarium, as manager, co-manager, or by providing animal care at least 15 times (5 pt)
- Pre-clinical mentorships or externships at other approved exotic, wildlife, and zoo facilities (5 pt/week); include VCS 892 Pre-Clinical Mentorships and VCS 901 Externships
- Taking any credit hours over 6 from the above "available elective courses" list (10 pt/credit hour)

- Safe Capture Certification Course (2-day course) (10 pt)
- International Wildlife Rehabilitation Council (IWRC) Basic Wildlife Rehabilitation (2-day course) (10 pt)
- Participate in other approved training programs, including the following (20 pt each):
 - MarVet (Marine Veterinary Medicine and Conservation): www.marvet.org
 - SeaVet (Aquatic Animal Health; University of Florida): <http://conference.ifas.ufl.edu/seavet/>
 - Aquamed (sponsored by the Gulf States Consortium of Colleges of Veterinary Medicine; Louisiana State University): <http://www.vetmed.lsu.edu/aquamed.htm>
 - Aquavet (Cornell University): <http://www.vet.cornell.edu/aquavet/>
 - Wildlife Vets (Nelspruit, South Africa): <http://www.wildlifevets.net/>
 - African Conservation Experience: <https://www.conservationafrica.net/>
 - Envirovet: <http://vetmed.illinois.edu/envirovet/>
 - Certification of Aquatic Veterinary Medicine (CERTAQV), through the World Aquatic Veterinary Medicine Association (WAVMA)
 - Introduction to Conservation and Wildlife Veterinary Medicine Online Certificate Program (Purdue University College of Veterinary Medicine): <https://vet.purdue.edu/global/wildlife-certificate.php>
 - Conservation Medicine and Diseases of Amphibian and Reptiles at Southwest Research Station
- Attend professional meetings: local (day-long; 5 pt), national or international (10 pt)
- Propose and complete an approved Capstone project/report as agreed upon in advance by the student and mentor (10 pt)
- Assist in research studies as agreed upon in advance by the student and mentor (5 pt)
- Experience in writing scientific papers for publication as an author or co-author (10 pt)
- Propose and complete an approved problems course (ie, pathology rounds as they pertain to our specialty) (10 pt)
- Completion of select webinars or courses online (1 pt/contact hour): numerous available, including WAVMA (WebCEPD program), Oxbow Animal Health Vet Connect, LafeberVet, etc.; student must take post-webinar test to get credit (R.A.C.E.); some may have student fees
- Progress towards (or completion of) an MPH, MS, or PhD in a field related to exotic pet/wildlife or zoological medicine (TBA)
- Join one or more professional organizations as an individual student member: American Association of Zoo Veterinarians (AAZV), Association of Avian Veterinarians (AAV), Association of Reptile and Amphibian Veterinarians (ARAV), Association of Exotic Mammal Veterinarians (AEMV), Wildlife Disease Association (WDA), International Association for Aquatic Animal Medicine (IAAAM) (5 pt)
- Other training experiences may be proposed by the student to the EAZMVC Committee

Total Credits Required: 14

Food Animal Veterinary DVM Certificate

The goal of the Food Animal Veterinary Certificate (FAVC) program is to prepare graduates for long-term success in food animal veterinary practice by incorporating skills in varied areas including animal health, production medicine, practice management, and client communications. Achieving this goal will result in a veterinary workforce capable of meeting the needs of livestock producers in a sustainable practice environment.

Required Core Courses

Coursework for completion of the certificate program is divided into two sections: core and elective courses. All coursework in the FAVC program are elective courses available within the DVM curriculum. Students in the DVM program must take 12 pre-clinical elective credits and 11 clinical elective credits as part of the degree requirements.

The core courses (4 credits) provide foundational knowledge and skills which must be acquired by all FAVC students. Students

may select elective coursework (10 credits) to align with their specific areas of interest in food animal medicine. The combination of core and elective coursework results in 14 required credit hours for FAVC completion. The clinical elective coursework may include a relevant course at another academic institution with an accredited DVM program as approved by the FAVC faculty committee.

Third Year

Fourth Year

- VCS 901 - Clinical Externship and/or Programmed Study **Credits: 0-6**
- VCS 917 - Advanced Rural Food Animal Business Management **Credits: 1**

Elective Courses

Pre-clinical Courses (at least 4 credit hours):

- VCS 891 - CS Veterinary Medicine Elective **Credits: .5-3**
- DMP 816 - Trade and Agricultural Health **Credits: 2**
- DMP 888 - Globalization, Cooperation, & the Food Trade **Credits: 1**

Clinical (4th Year) (at least 6 credit hours):

- VCS 901 - Clinical Externship and/or Programmed Study **Credits: 0-6**
- VCS 913 - Advanced Feedlot Production Management **Credits: 2**
- VCS 915 - Advanced Cow-Calf Production Management **Credits: 1**
- VCS 917 - Advanced Rural Food Animal Business Management **Credits: 1**
- VCS 919 - Food Animal Bull Reproduction **Credits: 2**
- VDMP 911 - Dairy Production Medicine **Credits: 3**
- Relevant course at another academic institution

Required Core Experiences

Member of at least one national veterinary professional association (e.g. AABP, AVC, AASRP, AASV).

Complete required procedure log (Appendix 1).

Complete required number of procedures from elective procedure log (Appendix 2).

Documented proficiency at core clinical skills during DVM core coursework:

- CS 748 Food Animal Local Practice
- CS 749 Food Animal Medicine and Surgery
- DMP 785 Diagnostic Medicine

College-wide seminar presentation of accumulated experiences and selected case management.

- scheduled in conjunction with CS 774 Rural Business Management

Shelter Medicine DVM Certificate

The goal of the Shelter Medicine Veterinary Certificate is to prepare Doctorate of Veterinary Medicine students for long term success in the field of shelter medicine by incorporating skills of varied areas that include but are not limited to shelter animal care and behavior, high-quality high-volume sterilization surgery and shelter management consultation. Achieving this goal will result in a veterinary graduate with a well-rounded foundation for a career in Shelter Medicine.

Graduation Requirements

Students in the DVM program must take 4 pre-clinical elective credits and 5 clinical elective credits as part of the certificate requirements. Students may take the remaining 6 credits required for the program in either pre-clinical or clinical elective credits.

Core (mandatory) courses (9 credits) provide comprehensive foundational knowledge and skills, which are required for all SMVC students. Students may select the additional coursework (6 credits) to align with their specific areas of interest in shelter medicine. The elective clinical coursework includes a required (2 credit) externship at a shelter approved by the SMVC faculty committee. This externship must focus on shelter medicine, population management and/or forensics, not on surgery. The time that the student spends on surgery during this externship must be 20% or below. Students must also have completed the Fear Free® Shelter Program during their time at K-State.

Documented proficiency of core clinical skills during DVM coursework (minimum grade 3.0: expected proficiency) for any clinical courses counting towards SMVC.

Mandatory Courses (4 credits pre-clinical and 5 credits clinical)

- VCS 891 - CS Veterinary Medicine Elective **Credits:** .5-3 Section A
- VCS 891 - CS Veterinary Medicine Elective **Credits:** 0.5-3 Section C
- VCS 892 - CS Veterinary Medicine Elective Cr/NC **Credits:** .5-3 Section G
- VAP 891 - A&P Veterinary Medicine Elective Graded **Credits:** .5-3 Section B
- VCS 937 - Shelter Medicine **Credits:** 2
- VCS 946 - Shelter Operations Consultation **Credits:** 1
- VCS 901 - Clinical Externship and/or Programmed Study **Credits:** 0-6

Optional Courses (must take at least 6 credits from the list below)

- VCS 891 - CS Veterinary Medicine Elective **Credits:** .5-3 Section T
- VCS 892 - CS Veterinary Medicine Elective Cr/NC **Credits:** .5-3 Section B
- VCS 891 - CS Veterinary Medicine Elective **Credits:** 0.5-3 Section K
- VCS 945 - Supplemental Dentistry for Small Animals **Credits:** 1
- VCS 942 - Advanced Surgical Experience **Credits:** 2
- VCS 901 - Clinical Externship and/or Programmed Study **Credits:** 0-6

Veterinary Medicine Sustainability DVM Certificate

The goal of the Veterinary Medicine Sustainability Certificate program is to prepare graduates to develop sustainable clinical practices, promote sustainability among their clientele, and engage the public in the area of sustainable animal health. A sustainable veterinarian promotes continuing animal health and food production through profitable and resource-efficient practices that create satisfying lives for veterinarians, staff and clients. Completion of the program will provide graduates with the knowledge necessary to enhance the sustainability of practices, clients, and companies with which they work.

Admission Requirements

Must be admitted to the DVM program at Kansas State University.

Required Courses (6 credit hours)

Course	Year(s) Offered
VCS 822 - Introduction to Sustainable Beef Systems Credits: 1 OR VCS 892 - Concepts in Sustainable Small Animal Practice Credits: 1	
VCS 832 - Antimicrobial Resistance in Bacteria: A One Health perspective Credits: 1	
VCS 891 - Business Principles for Veterinary Practice Credits: 1	
VCS 901 - Externship with emphasis in Veterinary Practice Sustainability Credits: 3	

Total Credits Required: 14

Elective Courses (8 credit hours)

Course	Year(s) Offered
VCS 820 - Topics in Global Veterinary Medicine Credits: 1	
VCS 840 - Communication with the Agricultural Worker Credits: 1	
VCS 891 - Applied Small Animal Behavior Credits: 1	
VCS 892 - Pre-Clinical Veterinary Sustainability Mentorship Credits: 1-3	
VCS 917 - Advanced Rural Food Animal Business Management Credits: 1	
VDMP 816 - Trade and Agricultural Health Credits: 2	
VDMP 888- Globalization & the Food Trade Credits: 1	
VDMP 891 - Ecotoxicology Credits: 1	
VDMP 891 - International Animal & Zoonotic Disease Credits: 1	

Diagnostic Medicine/Pathobiology

Derek Mosier, Head
T.G. Nagaraja, Director of graduate studies

305 Coles Hall
785-532-1214
tnagaraj@vet.ksu.edu

Program description

The Pathobiology Graduate Program of the College of Veterinary Medicine offers graduate programs leading to M.S., (Veterinary Biomedical Science), Ph.D. (Pathobiology), and combined D.V.M./M.S., or D.V.M./Ph.D. degrees. Degree candidates may specialize in research areas represented by the expertise of the members of the Graduate Group. Requirements for the Ph.D. degree include full-time study equivalent to at least 90 semester hours [60 for individuals with a D.V.M. and/or MS degree] including at least 30 hours of research credit for the dissertation and generally 30-39 hours of formal course work, a preliminary examination, research, a written dissertation, and a satisfactory defense of the dissertation at the final oral examination. The Ph.D. degree normally requires at least three years of full-time study. Students who hold a master's degree may request transfer of up to 30 hours of that degree toward a Ph.D. Demonstration of proficiency in foreign languages is not required. The University operates on a semester basis plus an eight-week summer session.

See Veterinary Medicine for additional information.

Program requirements

Minimum entrance requirements, include a B average in the junior and senior undergraduate years for applicants not holding a D.V.M./V.M.D. degree. All applicants are required to take General GRE and submit the scores with the application. International students must demonstrate proficiency in English by earning a satisfactory score on the TOEFL and must provide health and financial certificates. Candidates for admission to the Graduate School must be approved by the Pathobiology Graduate Program. Most incoming students have a degree in veterinary medicine, but some have degrees in animal science, microbiology, biology, biochemistry/pharmacology, genetics, or food science. The most important considerations for applicants are documented academic achievement and an interest in continued study and research in Pathobiology. Sufficient training in biology and a strong background in biochemistry are important requirements. Students seeking admission are encouraged to have the completed application submitted before the preceding semester. International students seeking admission for summer (June) or fall semester (August) should submit the application before January 1 and if seeking admission for the spring (January) semester should submit the application before August 1.

Financial support

Research Assistantships, which are entirely funded through grants received by the major professors, are available for qualified candidates on a competitive basis. Prospective students are encouraged to apply for federally sponsored fellowships and traineeships from agencies such as the USDA, NASA, NDEA, NIH, and NSF.

Research facility

The College of Veterinary Medicine is comprised of three major buildings: Coles Hall, Trotter Hall, and Mosier Hall. These buildings encompass approximately 468,838 total square feet and provide space for outstanding instructional, research, clinical, and diagnostic activities. Three departments, Anatomy and Physiology, Clinical Sciences, and Diagnostic Medicine/Pathobiology, the Veterinary Health Center and the Kansas State Veterinary Diagnostic Laboratory are in the college. In addition to numerous research laboratories within the departments, the college has several Core Laboratories, including the Analytical Chemistry Core, Biomedical Core, Flow Cytometry Laboratory, Confocal Microscopy Facility, Molecular and Cellular Biology Facility, Nanotechnology Core, and the Next-Gen Sequencing

Doctor of Philosophy

Pathobiology (PHD)

The Pathobiology Graduate Program is an interdepartmental and interdisciplinary program with a mission to provide a broad based graduate education to students seeking a PhD degree in the areas of infectious and non-infectious diseases of animals, food safety, security, and policy, and production animal medicine and management. The research activities of the graduate faculty, primarily in the Departments of Diagnostic Medicine/Pathobiology and Clinical Sciences are in specialized areas of Infectious Diseases, including Zoonotic Diseases and Transboundary Diseases, Bacteriology, Epidemiology, Immunology, Parasitology, Pharmacology, Virology, Companion Animal Health, Comparative Biomedical Sciences, Food Animal Health and Management, Food Safety and Security, and Translational Medicine. The program is also served by faculty from other departments or units at K-State, which include Anatomy and Physiology, Animal Sciences, Biochemistry and Molecular Biophysics, Biology, Biosecurity Research Institute, Entomology, and the Olathe campus. The faculty in the Pathobiology Program have national and international reputations in areas of transboundary diseases, swine viral diseases, bacterial diseases, vaccine development, vector-borne diseases, parasitic diseases, epidemiology, and food safety and security.

The research activities and discovery strengths of the faculty in the program are organized and focused in Centers and Institutes, which include the Beef Cattle Institute (BCI), Center of Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD), Center for Emerging and Zoonotic Infectious Diseases (CEZID), Center of Excellence for Translational and Comparative Oncology Research (CETCOR). In addition, graduate students in the program have opportunities to work with scientists in the federal research institutes, such as the Arthropod-Borne Animal Disease Research Unit (ABADRU), a United States Department of Agriculture (USDA) institute in Manhattan, KS to study vector borne diseases and the National Bio and Agro-Defense Facility), formerly Plum Island Animal Disease Center, a USDA laboratory to study transboundary diseases.

The graduate faculty in the program have established programmatic requirements, within the overall policies of the Graduate School, for admission, supervision, and completion of the degree and provide both the course instruction and the research training essential to complete the PhD degree. The graduate training is provided in a vibrant multidisciplinary environment, exposing students to a variety of disciplines and research areas. The program offers opportunities for DVM students to concurrently work on a dual degree program (DVM/PhD).

Admission Requirements

The Pathobiology Graduate Program in the College of Veterinary Medicine has the following requirements:

1. A cumulative grade point average of 3.0/4.0 in the baccalaureate degree, DVM/VMD or in the M.S degree. In special circumstances, students with a 2.8 or 2.9/4.0 will be considered for a probationary admission. A majority of the admitted students have a degree in Veterinary Medicine, but DVM is not a requirement.
2. Applicants are required to take the General Graduate Record Examination (GRE) and submit the scores with the application.
3. International students from countries where English is not the native language must provide English language proficiency test scores, such as the Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS), or Pearson Test of English (PTE).
4. Sufficient training and background in biology, molecular biology, and biochemistry are important requirements.

In order to be considered for admission, the applicant must FIRST identify, contact, and be accepted by a graduate faculty member in the Pathobiology Graduate Program.

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Core Course Requirements

- AP 896 - Introduction to Responsible Conduct of Biomedical Research **Credits: 2**
- DMP 970 - Pathobiology Seminar (PhD) **Credits: 1**
- Graduate Seminar **Credits: 1**
- Graduate Seminar **Credits: 1**

Students with a BS Degree

At least 90 semester hours of credits, including a minimum of 15 hours of formal course work (800-level or higher), and 30 hours of research credits (DMP 999 - Ph.D. Research in Pathobiology) for the dissertation, successful completion of a preliminary examination and approval of candidacy for the doctoral degree, completion of the research requirements and a written dissertation, and a satisfactory defense of the dissertation at the final oral examination.

Students with a MS Degree

Students already holding an applicable master's degree upon admission can count 30 credits toward the 90 credits required for the doctorate. In addition, at least 60 semester hours of credits, including a minimum of 15 hours of formal course work (800-level or higher), and 30 hours of research credits for the dissertation (DMP 999 - Ph.D. Research in Pathobiology); successful completion of a preliminary examination and approval of candidacy for the doctoral degree; completion of the research requirements and a written dissertation; and a satisfactory defense of the dissertation at the final oral examination.

Students with a DVM Degree or in a Dual DVM/PhD Degree Program

At least 90 semester hours of credits, including a minimum of 15 hours of formal course work (800-level or higher), and 30 hours of research credits for the dissertation (DMP 999 - PhD Research in Pathobiology), successful completion of a preliminary examination and approval of candidacy for the doctoral degree, completion of the research requirements and a written dissertation, and a satisfactory defense of the dissertation at the final oral examination. Students who hold a professional doctorate degree (DVM, MD, etc.) degree or enrolled in a dual DVM/PhD program may transfer a maximum of 30 graduate credit hours from a professional doctorate degree toward the PhD program of study. For students who do not have a bachelor's degree or not yet earned a bachelor's degree and are enrolled in the dual degree (DVM/PhD) program, the doctoral degree shall be awarded concurrently with the DVM or after the completion of the DVM degree.

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Agricultural Biosecurity Research Graduate Certificate

Contact: Dana Vanlandingham

Email: dlvanlan@k-state.edu

The 12-credit hour Agricultural Biosecurity Research Graduate Certificate is designed to foster the development of research scientists to safely plan and execute research in a variety of biosafety level environments (BSL-3, BSL-3 Ag, and BSL-4). This interdisciplinary certificate will instill common biosafety, containment, and regulatory compliance knowledge and skills that are required to work in high and maximum containment research facilities. The certificate will also provide a deeper understanding of the agents and toxins which are frequently studied in these facilities.

The Agricultural Biosecurity Research Graduate Certificate is offered through the College of Veterinary Medicine to non-degree and degree seeking graduate and Doctor of Veterinary Medicine (DVM) students who plan to work in high and maximum containment facilities. Students will develop an appreciation, and necessary skills, for the exacting performance standards required in these complex and demanding work environments.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

- DMP 690 - Essential Practices for BSL-3 Research Settings **Credits: 1**
- DMP 691 - Introduction to High Containment Laboratory Topics and Techniques **Credits: 3**
- DMP 813 - Select Agent Studies **Credits: 3**
- DMP 846 - Foundations of Biosecurity **Credits: 3**

Elective Courses

- DMP 770 - Emerging Diseases **Credits: 3**
- DMP 855 - Disease Detection, Surveillance and Risk Assessment **Credits: 3**
- DMP 871 - Molecular Diagnostics of Infectious Diseases **Credits: 3**
- DMP 893 - Principles of Biosafety and Biocontainment **Credits: 2**
- FDSCI 730 - A Multidisciplinary Overview of Food Safety and Security **Credits: 2**
- FDSCI 731 - Food Protection and Defense--Essential Concepts **Credits: 2**

Please note that other classes may be approved by the program director and associated faculty.

Total Hours Required for Graduate Certificate: 12

Public Health Core Concepts Graduate Certificate

Contact: Ellyn Mulcahy
E-mail: emulcahy@ksu.edu

The certificate program in Public Health Core Concepts is designed to give individuals, both working professionals and graduate students on campus with no formal public health education, a strong foundation of knowledge in the five core concept areas in public health: biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral sciences. The courses required for the certificate are the same ones required in the core concept areas for the Master of Public Health (MPH) degree program currently offered at Kansas State University. These five areas meet the Council of Education for Public Health (CEPH) program accreditation standards. The following are the basic or core competencies in each of the five discipline areas:

- Biostatistics: collection, storage, retrieval, analysis, and interpretation of health data; design and analysis of health-related surveys and experiments; and concepts and practice of statistical data analysis.
- Epidemiology: distributions and determinants of disease, disabilities, and death in human populations; the characteristics and dynamics of human populations; and the natural history of disease and the biologic basis of health.
- Environmental Health Sciences: environmental factors including, biological, physical, and chemical factors that affect the health of a community.
- Health Services Administration: planning, organization, administration, management, evaluation, and policy analysis of health programs.
- Social and Behavioral Sciences: concepts and methods of social and behavioral sciences relevant to the identification and the solution of public health problems.

The Director of the Master of Public Health degree program serves as the administrator of the Graduate Certificate in Public Health Core Concepts.

Send all documentation to:

Dr. Ellyn R. Mulcahy

Director, Master of Public Health Program

103 Trotter Hall

Kansas State University

Manhattan, KS 66506

More information about the MPH Program can be found at: <http://www.k-state.edu/mphealth/>.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Public Health at Kansas State University.

Admission Requirements

To apply for admission to the certificate program:

- Students must have completed an undergraduate degree and be making satisfactory progress in or completed a graduate degree as documented by an official transcript or other appropriate documentation
- Students must be concurrently enrolled in a graduate program at K-State OR be admitted in the graduate program as a non-degree student
- Students must submit a narrative letter that describes their interest and experience in public health and objectives for completing the certificate
- Students must submit a letter of recommendation from their major professor or employer (if already completed graduate degree)

After review of the application documents by the Director of the Master of Public Health Program, the Director may:

1. Admit the student to the certificate program
2. Conditionally admit the student to the certificate program and indicate which pre-requisite courses must be completed prior to enrollment in some or all of the certificate program courses
3. Reject the student for the certificate program

If at a later time the student applies to the MPH Program at Kansas State University and is admitted, the full fifteen hours in the graduate certificate may be applied to the MPH degree.

Graduate students working toward advanced degrees may use any or all of the certificate courses in a program of study with the approval of the student's supervisory committee. All students are required to complete a Graduate Completion Form, found on the Graduate School list of forms. Completed forms should be signed by the Program Director. The Program Office will verify grades achieved prior to the expected date of graduation.

Special Requirements

All courses applied toward the certificate must be completed with a grade point average of 3.0 or higher.

Course Requirements

Required Courses

Coursework can be taken in a distance learning format or in the traditional on-campus classroom setting. The certificate program in public health core concept requires a total of 15 credit hours taken from the following five courses:

- MPH 701 - Fundamental Methods of Biostatistics **Credits: 3**
- MPH 720 - Administration of Health Care Organizations **Credits: 3**
- MPH 754 - Introduction to Epidemiology **Credits: 3**
- MPH 802 - Environmental Health **Credits: 3**
- MPH 818 - Social and Behavioral Bases of Public Health **Credits: 3**

Total Hours Required for Graduate Certificate: 15

Master of Public Health

Master of Public Health (MPH)

The Master of Public Health (MPH) degree is a 42 credit hour program designed to provide graduate-level education for individuals currently employed or anticipating a career in the field of public health. Each student in this program will complete 15 credit hours of the core curriculum, covering courses in each of the five broad aspects of public health:

- Epidemiology
- Environmental Health Sciences
- Biostatistics
- Health Service Administration
- Social and Behavioral Sciences

Course Requirements

A total of 42 semester hours is required to complete this degree offered through the Public Health graduate program. The program is a professional degree that requires a core of public health courses (15 credit hours), a field experience or master's thesis (6 credit hours), and an area of emphasis determined by the student's program committee (21 credit hours). An area of emphasis may be selected from food safety and biosecurity, infectious diseases/zoonoses, public health human nutrition, or public health physical activity.

Required Courses (15 credit hours)

- MPH 701 - Fundamental Methods of Biostatistics **Credits: 3**
- MPH 720 - Administration of Health Care Organizations **Credits: 3**
- MPH 754 - Introduction to Epidemiology **Credits: 3**
- MPH 802 - Environmental Health **Credits: 3**
- MPH 818 - Social and Behavioral Bases of Public Health **Credits: 3**

Area of emphasis (21 credit hours)

Select from one of these four areas. The 21 credit hours required for each emphasis area are listed below.

- Food Safety and Biosecurity
- Infectious Diseases and Zoonoses
- Public Health Nutrition
- Public Health Physical Activity

Food Safety and Biosecurity

Required courses (10 credit hours):

- FDSCI 730 - A Multidisciplinary Overview of Food Safety and Security **Credits: 2**
- FDSCI 731 - Food Protection and Defense--Essential Concepts **Credits: 2**
- DMP 815 - Multidisciplinary Thought and Presentation **Credits: 3**
- DMP 816 - Trade and Agricultural Health **Credits: 2**
- DMP 888 - Globalization, Cooperation, & the Food Trade **Credits: 1**

Select any remaining credits needed for the degree from the list below:

- AAI 801 - Interdisciplinary Process **Credits: 3**
- DMP 710 - Introduction to One Health **Credits: 2**
- DMP 844 - Global Health Issues **Credits: 3**
- DMP 880 - Problems in Pathobiology (MS) **Credits: 1-6**
- DMP 855 - Disease Detection, Surveillance and Risk Assessment **Credits: 3**
- DMP 888 - Globalization, Cooperation, & the Food Trade **Credits: 1**
- FDSCI 600 - Food Microbiology **Credits: 2**
- FDSCI 601 - Food Microbiology Lab **Credits: 2**
- FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food **Credits: 3**
- FDSCI 695 - Quality Assurance of Food Products **Credits: 3**
- FDSCI 750 - Food Toxicants **Credits: 2**
- FDSCI 751 - Food Laws and the Regulatory Process **Credits: 2**
- FDSCI 791 - Advanced Application of HACCP Principles **Credits: 3**
- FDSCI 820 - Advanced Food Microbiology & Biotechnology **Credits: 2**
- MC 750 - Strategic Health Communication **Credits: 3**
- MC 760 - Issues, Risk, and Reputation **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

Plus any graduate course approved by the supervisory committee and the program director.

Infectious Diseases and Zoonoses

In addition to the core courses (15 credit hours) and field experience (6 hours) or thesis research and field experience (9 hours), students must complete credit hours from the Infectious Diseases and Zoonoses emphasis area as outlined below to fulfill the 42 credit hour requirement for the MPH degree. Substitutions may be approved by the major professor, supervisory committee, and the MPH Program director.

Required courses (11 or 12 credit hours):

- BIOL 530 - Pathogenic Microbiology Credits: 3
OR
- VDMP 814 - Veterinary Bacteriology & Mycology Credits: 3 (or DMP 814 Lecture only Credits: 3)
- DMP 817 - Principles of Veterinary Immunology Credits: 3
- DMP 710 - Introduction to One Health Credits: 2
- DMP 815 - Multidisciplinary Thought and Presentation Credits: 3

Select any remaining credits needed for the degree from the list below:

- AAI 801 - Interdisciplinary Process Credits: 3
- ASI 540 - Principles of Animal Disease Control Credits: 3
- BIOL 529 - Ecology Credits: 3
- BIOL 545 - Human Parasitology Credits: 3
- BIOL 546 - Human Parasitology Laboratory Credits: 1
- BIOL 604 - Biology of the Fungi Credits: 3
- BIOL 670 - Immunology Credits: 3
- BIOL 671 - Immunology Lab Credits: 2
- BIOL 675 - Genetics of Microorganisms Credits: 3
- BIOL 687 - Microbial Ecology Credits: 3
- BIOL 730 - General Virology Credits: 3
- DMP 834 - Veterinary Parasitology Credits: 4
- DMP 770 - Emerging Diseases Credits: 3
- AP 871 - Toxicology Credits: 3
- DMP 816 - Trade and Agricultural Health Credits: 2
- DMP 830 - Quantitative Analysis in Veterinary Medicine Credits: 3
- DMP 844 - Global Health Issues Credits: 3
- DMP 850 - Immunology of Domestic Animals Credits: 3
- DMP 854 - Intermediate Epidemiology Credits: 3
- DMP 855 - Disease Detection, Surveillance and Risk Assessment Credits: 3
- DMP 860 - Bacterial Pathogenesis and Host Response Credits: 3
- DMP 871 - Molecular Diagnostics of Infectious Diseases Credits: 3
- DMP 880 - Problems in Pathobiology (MS) Credits: 1-6
- DMP 888 - Globalization, Cooperation, & the Food Trade Credits: 1
- DMP 954 - Advanced Epidemiology Credits: 4
- ENTOM 849 - Arthropod Vectors of Human Pathogens Credits: 3
- FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food Credits: 3
- FDSCI 730 - A Multidisciplinary Overview of Food Safety and Security Credits: 2
- FDSCI 731 - Food Protection and Defense--Essential Concepts Credits: 2
- GEOG 508 - Geographic Information Systems I Credits: 4
- GEOG 608 - Geographic Information Systems II Credits: 3
- MC 750 - Strategic Health Communication Credits: 3
- MC 760 - Issues, Risk, and Reputation Credits: 3
- STAT 705 - Regression and Analysis of Variance Credits: 3
- STAT 716 - Nonparametric Statistics Credits: 3

- STAT 717 - Categorical Data Analysis **Credits: 3**
- STAT 720 - Design of Experiments **Credits: 3**
- STAT 730 - Multivariate Statistical Methods **Credits: 3**

Plus any graduate course approved by the supervisory committee and the program director.

Public Health Nutrition

In addition to the core courses (15 credit hours) and field experience (6 hours) or thesis research and field experience (9 hours), students must complete credit hours from the Public Health Nutrition emphasis area as outlined below to fulfill the 42 credit hour requirement for the MPH degree. Substitutions may be approved by the major professor, supervisory committee, and the MPH Program director.

Required courses (10 credit hours):

- FNDH 600 - Public Health Nutrition **Credits: 3**
- FNDH 820 - Functional Foods for Chronic Disease Prevention **Credits: 3**
- FNDH 844 - Nutritional Epidemiology **Credits: 3**
- FNDH 880 - Professional Communication in FNDH **Credits: 1**

Select any remaining credits needed for the degree from the list list below:

- AAI 801 - Interdisciplinary Process **Credits: 3**
- FNDH 620 - Nutrient Metabolism **Credits: 3**
- FNDH 631 - Clinical Nutrition I **Credits: 3**
- FNDH 632 - Clinical Nutrition II **Credits: 3**
- FNDH 635 - Sports Nutrition **Credits: 3**
- FNDH 700 - Global Health and Nutrition **Credits: 3**
- FNDH 718 - Physical Health and Aging **Credits: 3**
- FNDH 726 - Nutrition and Wellness **Credits: 3**
- FNDH 735 - Advanced Energy Balance **Credits: 3**
- FNDH 780 - Problems in Food, Nutrition, Dietetics and Health **Credits: 1-6**
- FNDH 782 - Topics in Food Nutrition, Dietetics and Health **Credits: 1-6**
- FNDH 800 - Nutrition Education and Communication **Credits: 3**
- FNDH 810 - Advanced Macronutrient Metabolism **Credits: 5**
- FNDH 812 - Advanced Micronutrient Metabolism **Credits: 3**
- SENS 841 - Consumer Research - Fundamentals **Credits: 1**
- FNDH 862 - Maternal and Child Nutrition **Credits: 3**
- FNDH 891 - Environmental Scanning and Analysis of Current Issues in Dietetics **Credits: 3**
- KIN 610 - Program Planning and Evaluation **Credits: 3**
- KIN 805 - Physical Activity and Human Behavior **Credits: 3**
- MC 750 - Strategic Health Communication **Credits: 3**
- MC 760 - Issues, Risk, and Reputation **Credits: 3**
- PSYCH 518 - Introduction to Health Psychology **Credits: 3**
- SOCIO 541 - Wealth, Power, and Privilege **Credits: 3**
- SOCIO 570 - Race and Ethnic Relations in the USA **Credits: 3**
- STAT 705 - Regression and Analysis of Variance **Credits: 3**

- STAT 710 - Sample Survey Methods Credits: 3
- STAT 713 - Applied Linear Statistical Models Credits: 3
- STAT 716 - Nonparametric Statistics Credits: 3
- STAT 717 - Categorical Data Analysis Credits: 3
- STAT 720 - Design of Experiments Credits: 3
- STAT 725 - Introduction to the SAS Computing Credits: 1
- STAT 730 - Multivariate Statistical Methods Credits: 3

Plus any graduate course approved by the supervisory committee and the program director.

Public Health Physical Activity

Required courses (10 credit hours):

- KIN 610 - Program Planning and Evaluation Credits: 3
- KIN 612 - Policy, Built Environment and Physical Activity Credits: 3
- KIN 805 - Physical Activity and Human Behavior Credits: 3
- KIN 890 - Graduate Seminar in Kinesiology Credits: 1

Select any remaining credits needed for the degree from the list below:

- AAI 801 - Interdisciplinary Process Credits: 3
- CDPLN 712 - Sustainable Communities Credits: 3
- CDPLN 715 - Principles and Strategies of Community Change Credits: 3
- CNRES 751 - Interpersonal Conflict Skills and Strategies Credits: 3
- DMP 710 - Introduction to One Health Credits: 2
- FNDH 600 - Public Health Nutrition Credits: 3
- FNDH 844 - Nutritional Epidemiology Credits: 3
- GERON 773 - Physical Health and Nutrition in Aging Credits: 3
- HDFS 806 - Statistical Methods in Human Development and Family Science I Credits: 3
- HDFS 809 - Qualitative Research Methods in Human Development and Family Science Credits: 3
- HDFS 893 - Evaluation of Prevention Science Programs Credits: 3
- KIN 600 - Interpersonal Aspects of Physical Activity Credits: 3
- KIN 601 - Cardiorespiratory Physiology Credits: 3
- KIN 602 - Social Structural Determinants of Physical Activity Credits: 3
- KIN 606 - Topics in the Behavioral Basis of Kinesiology Credits: 1-3
- KIN 616 - Obesity and Physical Activity: Behavioral, Environment, and Policy Influences Credits: 3
- KIN 625 - Exercise Testing and Prescription Credits: 3
- KIN 655 - Individual Physical Activity Promotion Credits: 3
- KIN 815 - Research Methods in Kinesiology Credits: 3
- KIN 851 - Topics in the Physiological Basis of Kinesiology Credits: 1-3
- KIN 852 - Topics in the Behavioral Basis of Kinesiology Credits: 1-3
- KIN 896 - Independent Study in Kinesiology Credits: 1-4
- MC 750 - Strategic Health Communication Credits: 3
- SOCIO 541 - Wealth, Power, and Privilege Credits: 3
- SOCIO 880 - Social Movements Credits: 3

Plus any graduate course approved by the supervisory committee and the program director.

Required "Public Health Practice" (3, 4 or 6 hours)

Field experience (6 hours); OR a combined field experience (4 hours) and master's report (2 hours); OR a combined master's thesis (6 hours) and field experience (3 hours)

- MPH 840 – Public Health Field Experience credits (3, 4 or 6 hours)
- DMP 898, FDSCI 898, FNDH 898, or KIN 898 – Master's Report credits (var.) plus MPH 840 for 4 hrs
- DMP 899, FDSCI 899, FNDH 899, or KIN 899 – Master's Thesis credits (var.) plus MPH 840 for 3 hrs

Total Hours Required for Master's: 42

Master of Science

Veterinary Biomedical Science (MS)

The Veterinary Biomedical Sciences (VBS) program in the College of Veterinary Medicine is designed to train graduate students through excellence in teaching and innovative basic, applied, and clinical research that improves animal and human health. The program offers opportunities for DVM students to concurrently work on a dual degree program (DVM/MS) to gain research experience to enhance their career opportunities and to meet the demands of internships and residencies. The graduate faculty members in the program have established programmatic requirements, guided by the policies of the Graduate School, for admission, supervision, and completion of the MS degree.

Areas of Emphasis

The VBS program has three areas of emphasis or subdisciplines, Anatomy and Physiology, Clinical Sciences, and Pathobiology, which are under the supervision of the graduate faculty in the Departments of Anatomy and Physiology, Clinical Sciences, and Diagnostic Medicine/Pathobiology, respectively. The research activities of the graduate faculty are in specialized areas of Infectious and noninfectious diseases, including Zoonotic Diseases and Transboundary Diseases, metabolic diseases, Anatomy, Bacteriology, Epidemiology, Immunology, Parasitology, Pharmacology, Anatomic and Clinical Pathology, Nanotechnology, Physiological Sciences, Clinical Sciences, Companion Animal Health, Comparative Biomedical Sciences, Cancer Biology and Treatment, Food Animal Health and Management, Food Safety and Security, Stem Cell Biology, and Translational Medicine. The research activities and discovery strengths of the faculty in the program are organized and focused in Centers and Institutes, which include the Beef Cattle Institute, Center of Epithelial Research, Center of Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD), Center of Excellence for Translational and Comparative Oncology Research (CETCOR), Center for Outcomes Research and Education (CORE), Midwest Institute for Comparative Stem Cell Biology and the U.S.-China Center for Animal Health. In addition, graduate students in the program have opportunities to work with scientists in the federal research institutes, such as the Arthropod-Borne Animal Disease Research Unit (ABADRU), a United States Department of Agriculture (USDA) institute in Manhattan, KS to study vector borne diseases and the National Bio and Agro-Defense Facility), formerly Plum Island Animal Disease Center, a USDA laboratory to study transboundary diseases.

Admission Requirements

The Pathobiology Graduate Program in the College of Veterinary Medicine has the following requirements for admission:

1. A cumulative grade point average of 3.0/4.0 in the baccalaureate degree or DVM/VMD degree. In special circumstances, students with a 2.8 or 2.9/4.0 will be considered for a probationary admission. A majority of the admitted students have a degree in Veterinary Medicine, but DVM is not a requirement.
2. A General Graduate Record Examination (GRE) score is not required, but applicants are encouraged to take the examination and submit the scores with the application.
3. International students from countries where English is not the native language must provide English language proficiency test scores, such as the Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS), or Pearson Test of English (PTE).
4. The most important considerations for admission are that applicants have documented academic achievement and an interest in an advanced study and research in the fields of Veterinary Biomedical Sciences.

In order to be considered for admission in the VBS program, applicants should contact individual graduate faculty in the program to identify research interests and research program. **A willingness to accept the applicant as a graduate student by a faculty is a requirement for approval of the application for admission by the Executive Committee of the Graduate Program.** The major professor will provide guidance and mentorship, and in most cases, a Graduate Research Assistantship (GRA). If the professor does not have funding available to offer a GRA, the applicant could still choose to work under that professor if the student has alternate funding sources available (scholarships, fellowships, personal funds, etc.). An applicant that is not able to identify a major professor can still submit an application.

Course Requirements

A minimum of 30 semester hours of credit is required for completion of the Veterinary Biomedical Sciences MS Degree.

Regular MS Students:

Students with a bachelor's degree must complete a minimum of 30 semester hours of credit.

Dual-Degree DVM/MS Students:

Students with a bachelor's degree who are concurrently pursuing the DVM degree at Kansas State University may apply up to 12 credit hours of relevant courses in the DVM curriculum toward both the DVM degree and the MS degree provided that the grades in these courses are consistent with Graduate School requirements. The specific courses from the veterinary medicine degree transcript for which credits are being claimed must be listed on the program of study under the transfer credit(s) section.

Post DVM Students:

Students with a DVM degree may apply up to 12 hours of credit from the veterinary medicine degree transcript toward the 30 semester hours of credit required for the MS degree. There is no need list specific courses, instead, in the transfer credit section, the university that granted the DVM degree and the year the degree was awarded should be listed.

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Areas of Emphasis

Anatomy and Physiology

The Anatomy and Physiology Area of Emphasis is administered by the Graduate Faculty and Ancillary Graduate Faculty in the Department of Anatomy and Physiology. The Anatomy and Physiology Department offers two M.S. options: a research-based M.S. and a coursework based M.S.

Research Option

The primary goal of the Research Option in this Area of Emphasis is to prepare students for academic positions in various health science-related institutions such as Colleges of Veterinary Medicine and Schools of Medicine and Dentistry, as well as positions in industry and agribusiness. Major research themes include epithelial physiology, stem cell biology and cancer, cardiopulmonary physiology, immunophysiology, neuroscience and pharmacology. These themes encompass the topics of cell signaling, epithelial cell solute transport, comparative exercise physiology, food animal immunophysiology, molecular biology of membranes, mechanisms of stress phenomena, molecular genetics and gene mapping, neural control of cardiovascular function, and pathophysiology of microcirculation. Research laboratories are equipped with state-of-the-art facilities, equipment, and instruments that support the many excellent opportunities for basic and applied research. Adjunct faculty members from other departments comprise a strong ancillary support group.

Course Requirements:

The student will present two seminars in addition to her or his oral final defense/examination to graduate.

Additional courses according to the needs of the student, and the recommendations of the major professor and the student's supervisory committee,

- **AP 803 - Seminar Credits: 1** (one credit per semester)

One Year MS Program (non-thesis and non-report option)

The primary goal of coursework-based MS degree in the Anatomy and Physiology is to prepare students for successful entry into medical professional degree programs such as D.V.M., M.D., D.O., D.D.S., etc.

Course Requirements:

The following courses are required:

Summer Semester (9 credits)

- **AP 737 - Introduction to Cell Physiology Credits: 2**
- **AP 838 - Anatomy 1 Credits: 3**
- **AP 740 - Study Methods and Career Preparation for Health Professional Students Credits: 1**
- **AP 641 - Histology for Health Professions Credits: 3**

Fall Semester (7 credits)

- **AP 842 - Anatomy 2 Credits: 3**
- **AP 743 - Systems Physiology Credits: 4**
- **Electives Credits: 3-4**

Spring Semester (8 credits)

- **AP 600 - Introduction to Pharmacology for Health Professionals Credits: 3**
- **AP 803 - Seminar Credits: 1** (Section B)
- **AP 839 - Biomedical Methods Laboratory Credits: 3**
- **AP 894 - Comparative Embryology Credits: 1**
- **Electives Credits: 2-3**

Other Electives

In addition, other electives can be selected in consultation with the student's major professor and supervisory committee. Examples of appropriate elective courses include:

AP – any graduate course 700+ CS – any graduate course 700+ DMP – any graduate course 700+ ASI – any course 700+ BIOCH (Biochemistry) – any course 700+ BIOL (Biology) – any from the following:

- **BIOL 670 - Immunology Credits: 3**
- **BIOL 675 - Genetics of Microorganisms Credits: 3**

- BIOL 705 - Eukaryotic Genetics **Credits: 3**
- BIOL 707 - Advanced Cell Biology **Credits: 3**
- BIOL 730 - General Virology **Credits: 3**
- BIOL 808 - Mechanisms of Gene Regulation **Credits: 3**
- BIOL 830 - Advanced Virology **Credits: 3**
- BIOL 835 - Cellular and Molecular Parasitology **Credits: 3**
- BIOL 840 - Molecular and Cellular Immunology **Credits: 3**
- BIOL 855 - Molecular Biology of Cellular Membranes **Credits: 3**
- BIOL 860 - Modern Molecular Approaches **Credits: 3**

Culminating Experience Requirement:

In addition to the required coursework, students in the one-year master's program must complete a culminating experience for the master's degree. Students will consult with their major professor and supervisory committee to determine what the culminating experience will be. The culminating experience may or may not be taken for credit. Students can enroll in AP 898 - Master's Report (2 credits) if desired to reflect their work on this experience as elective credits.

Clinical Sciences

The Clinical Sciences Area of Emphasis is administered by the Graduate Faculty in the Department of Clinical Sciences.

The primary goal of graduate study in the Clinical Sciences Area of Emphasis is to prepare students for careers in teaching, research, or service in a clinical specialty area or research and development program. Training in planning research projects and writing research proposals provide students the ability to function with teams of scientists from the fields of biomedical and clinical sciences. The student's experience in teaching and literature study will form the basis for development of future teaching and research programs within his or her discipline. After completing graduate work the student will be better prepared to conduct research both independently and as a team member. In addition to the MS in clinical specialty fields (small animal, equine and large animal), students can earn MS degree in Production Animal Medicine. The department, along with the Veterinary Health Center and the Beef Cattle Institute at Kansas State University, has modern facilities and equipment for both basic and applied studies.

The Clinical Sciences area of emphasis for the Veterinary Biomedical Science master's program can include full time graduate students, dual DVM/MS degree students, or concurrent clinical residency-MS program.

Course Requirements:

Statistics (3 credits)

- STAT 701 - Fundamental Methods of Biostatistics **Credits: 3**
or
 - STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
 - **Seminar (1 credit)**
 - CS 829 - Applied Production Medicine **Credits: 1**
or
 - CS 859 - Clinical Sciences Seminar **Credits: 1**
or
- Any other course as approved by the student's supervisory committee

Off Campus Research:

In selected cases a student may conduct extensive research and training off campus. These activities must be approved by the student's supervisory committee in advance.

Pathobiology

The Pathobiology Area of Emphasis is administered by the Graduate Faculty and Ancillary/Adjunct Graduate Faculty in the Department of Diagnostic Medicine/Pathobiology.

The primary goal of graduate study in the Pathobiology Area of Emphasis is to prepare students for careers in teaching, research, or service related to animal production or animal health in academic institutions, industries, or in state and federal agencies. The MS program in the Pathobiology subdiscipline is managed by faculty involved in epidemiology, immunology, diagnosis, pathogenesis, and prevention/control of infectious, metabolic, and parasitic diseases of animals and humans, food safety and security, public health and zoonosis, and clinical and anatomic pathology. The Pathobiology graduate program is sufficiently diverse to provide the critical mass and cross-disciplinary interactions necessary to offer high quality graduate training, yet focused to avoid dilution of resources and conflicts with other graduate programs. The scope and flexibility of the graduate program are notable strengths. Research laboratories are equipped with state-of-the-art facilities, equipment, and instruments to provide excellent opportunities for basic and applied research. The Veterinary Diagnostic Laboratory (VDL), housed in the department, is fully accredited by the American Association of Veterinary Diagnostic Laboratory Diagnosticians. The VDL is internationally recognized for its diagnostic capabilities for many important diseases of food and companion animals. Laboratories and support staff address all aspects of diagnosis from necropsy and histopathology, clinical pathology, serology, toxicology and detection of infectious agents.

Course Requirements:

2 credits.

- **DMP 870 - Pathobiology Seminar (MS) Credits: 1** (one credit per semester)
One of the seminar courses, with the permission of the student's supervisory committee, could be taken from a different program or department.
Additional courses according to the needs of the student, the recommendations of the major professor and the student's supervisory committee.

Thesis Option Courses

As part of the degree program requirements, the student will complete a minimum of 6 and a maximum of 12 credit hours of research and will write and defend a thesis as the culminating experience for the degree.

Report Option Courses

As part of the degree program requirements, the student will complete 2 credit hours of master's report. A master's report is generally shorter than a thesis, and could include the results of a more limited original investigation. Alternatively, the report may be a review of the state of a particular scholarly or scientific problem, and in the case of clinical sciences or pathobiology disciplines it may include a case report. The student will write and submit the report as the culminating experience for the degree.

Coursework Only Option Courses

The student's degree program will consist of course work only, but could include evidence of scholarly efforts, such as term papers, as determined by the committee. An oral examination to assess the student's competency in the courses listed in the program of study will serve as the culminating experience. The coursework only option is not available in the Clinical Sciences

Area of Emphasis. Students also have the option of an accelerated, non-thesis, curriculum-only MS program that can be completed in one year.

Total Hours Required for Master's: 30

Graduate School

Claudia Petrescu, Vice Provost for Graduate Education and Dean of the Graduate School

113-119 Eisenhower Hall

785-532-6191

Fax: 785-532-2983

grad@ksu.edu

www.k-state.edu/grad

Graduate School mission

The Graduate School provides strategic leadership and vision to advance graduate education in directions consistent with university goals and priorities and the evolving role of graduate education in the 21st century. It formulates and implements a comprehensive and visionary strategy for graduate education that engages prospective and current graduate students from Kansas, alumni and community partners. It works collaboratively with academic units and other K-State partners to grow and develop innovative graduate programs and world class graduate education at K-State. In its pursuit of excellence, the Graduate School celebrates the diverse perspectives our students and faculty bring to the educational programs that serve the needs of individuals, families and society; and research that confronts some of the world's most pressing problems.

Graduate Certificate

Biobased Products and Bioenergy Graduate Certificate

Contact: Placidus Amama

Email: pamama@ksu.edu

This certificate is offered through the Graduate School, currently through the collaboration of the Departments of Agronomy, Biological and Agricultural Engineering, Chemical Engineering, and Grain Science and Industry. Chemical feedstocks, materials, and fuels derived from biomass have received increasing emphasis nationally and are seen as being very desirable from a number of standpoints. Private industry now actively recruits individuals with specific training in bioprocessing and biobased materials. With the interest in green chemistry and in sustainability increasing along with the escalation of crude oil prices during 2008, emphasis on the utilization of biomass for energy and materials can only continue to increase. This rapidly expanding industry has a growing need for a trained workforce. This Graduate Certificate Program is designed to identify students' focus in their graduate training as well as provide post-baccalaureate educational opportunities for industry practitioners for whom a full graduate degree program is not appropriate at that point in their career. Students can develop a truly interdisciplinary background in a specific area, and yet the certificate will permit any given individual to tailor their program of study to their specific interests.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Course Requirements

Required Courses

The graduate certificate program proposed will consist of a minimum of fifteen (15) credit hours of coursework selected from a series of courses approved by the Biobased Products and Bioenergy Certificate Committee (BPBCC). Each student will be required to complete at least one of the courses below, each of which includes content from more than one of the designated subject areas. In the case of students pursuing a graduate degree, the course cannot be selected from a student's primary academic department.

- AGRON 630 - Crop Improvement and Biotechnology **Credits: 3**
- AGRON 640 - Cropping Systems **Credits: 3**
- GRSC 825 - Novel Uses of Biopolymers **Credits: 2**
- CHE 715 - Biochemical Engineering **Credits: 3**
- BAE 545 - Biological Process Engineering **Credits: 3**
- GRSC 745 - Fundamentals of Bioprocessing **Credits: 3**

Each student must complete a variable (2-3) credit hour special topics course in which the student completes a "capstone" experience as a member of a multidisciplinary team. Each team will select their project from an approved list of interdisciplinary topics and will be mentored by a faculty member. Students will enroll in one of the courses below to meet this requirement.

- AGRON 600 - Problems in Agronomy **Credits: 1-18**
- BAE 620 - Topics in Biological Systems Engineering **Credits: 1-18**
- BAE 820 - Topics in Biological & Agricultural Engineering **Credits: 1-18**
- CHE 802 - Selected Topics in Materials Science **Credits: 1-18**
- CHE 805 - Selected Topics in Biochemical Engineering **Credits: 3**
- GRSC 910 - Topics in Grain Science **Credits: 1-18**

Associated Courses

The remaining coursework is to be selected from at least three of the following four subject areas: plant science, plant/crop production, processing, and utilization. Courses must be taken from a minimum of three different academic departments. The primary required course chosen by the student (AGRON 630, AGRON 640, GRSC 825, CHE 715, BAE 545, or GRSC 745) counts towards the subject area and academic department requirements.

Students will submit a proposed list of courses to be used in meeting the requirements for the certificate of graduate studies to the coordinator of the biobased products and bioenergy certificate program with the program of study being formally approved by the BPBCC.

- AGRON 550 - Forage Management and Utilization **Credits: 3**
- AGRON 610 - Biotechnology **Credits: 3**
- AGRON 630 - Crop Improvement and Biotechnology **Credits: 3**
- AGRON 640 - Cropping Systems **Credits: 3**
- AGRON 655 - Site Specific Agriculture **Credits: 3**
- AGRON 746 - Environmental Soil Physics **Credits: 3**
- AGRON 680 - Plant Genetics **Credits: 3**
- AGRON 840 - Crop Physiology **Credits: 3**
- BIOL 500 - Plant Physiology **Credits: 3**
- BIOL 676 - Molecular Genetics Laboratory **Credits: 3**
- PLPTH 610 - Biotechnology **Credits: 3**
- BIOCH 766 - Recombinant DNA Laboratory I **Credits: 1**
- BIOCH 767 - Recombinant DNA Laboratory II **Credits: 1**

- PLPTH 880 - Plant Molecular Biology Credits: 3
- BIOCH 775 - Molecular Biophysics Credits: 3
- BIOCH 755 - Biochemistry I Credits: 3
- BIOCH 765 - Biochemistry II Credits: 3
- CHM 820 - Materials Chemistry Credits: 3
- BAE 545 - Biological Process Engineering Credits: 3
- BAE 650 - Energy and Biofuel Engineering Credits: 3
- BAE 740 - Biomaterials Processing Credits: 3
- GRSC 602 - Cereal Science Credits: 3
- GRSC 620 - Extrusion Processing in the Food and Feed Industries Credits: 4
- GRSC 740 - Biomaterials Processing Credits: 3
- GRSC 825 - Novel Uses of Biopolymers Credits: 2
- GRSC 830 - Physical Properties of Cereal Polymers Credits: 3
- GRSC 901 - Starch Chemistry and Technology Credits: 3
- CHE 626 - Bioseparations Credits: 3
- CHE 656 - Polymer Science and Engineering Credits: 3
- CHE 682 - Surface Phenomena Credits: 3
- CHE 715 - Biochemical Engineering Credits: 3

Total Hours Required for Graduate Certificate: 15

School of Applied and Interdisciplinary Studies (Olathe Campus)

Ben Wolfe, Dean & CEO

Michael Banks, Interim Associate Dean of Academic Affairs, Head

Rebekkah Stuteville, Assistant Dean & PSM Program Director

Graduate Faculty:

A. Paige Adams, Ph.D., Cornell University
 Manreet Singh Bhullar, Ph.D., Iowa State University
 Royce Ann Collins, Ph.D., Kansas State University
 Judy Favor, Ph.D., University of Texas
 Majid Jaber-Douraki, Ph.D., University of Laval
 Tricia Jenkins, Ph.D., Kansas State University
 Haley Larson, Ph.D., University of Minnesota – Twin Cities
 Londa Nwadike, Ph.D., University of Iowa
 Eleni Pliakoni, Ph.D., University of Thessaly
 Douglas Shane, Ph.D., Kansas State University
 Rebekkah Stuteville, Ph.D., University of Missouri – Kansas City
 Martin Talavera, Ph.D., Kansas State University
 Teng Yang, Ph.D., Purdue University

22201 W Innovation Dr.
 Olathe KS, 66061
 913-541-1220
 Fax: 913-541-1488

olatheinfo@ksu.edu
<http://olathe.k-state.edu/>

The School of Applied and Interdisciplinary Studies advances Kansas State University Olathe's mission to be the model and leader of adaptable, interdisciplinary and innovative education, research and public/private engagement in the Kansas City area, bridging the University with global and local communities, government and industry partners. The School offers academic programs and applied research that address industry demand in the food, animal health and related sectors. The interdisciplinary studies approach to critical thinking allows students to gain a more comprehensive understanding of complex issues and an enhanced ability to address broad and multi-faceted challenges. The School provides students with a high degree of flexibility in designing their educational and research plans, which increase the technical and professional skills needed for career advancement.

Programs

Applied Biosciences (MS)

Location(s): Olathe Campus, Olathe Online

Offered by the K-State School of Applied and Interdisciplinary Studies (Olathe Campus), this 30-credit hour program combines education in animal health and food safety and security with leadership and management skills. The program is ideal for students seeking to build the STEM and professional expertise needed for career advancement. All students take professional skills courses, a statistics course, and STEM courses in the animal health track, food safety and security, or industry analytics track. Students must select the track they wish to pursue at the time of admission. All students must also complete two capstone courses.

After completion of the program, graduates will be able to:

- 1) Demonstrate advanced knowledge of one or more relevant STEM fields,
- 2) Demonstrate oral and written communication skills in a professional STEM environment,
- 3) Effectively analyze quantitative data for use across multiple science disciplines, and
- 4) Synthesize information from multiple disciplines to accurately identify problems and develop innovative solutions.

Courses are offered online, face-to-face, and in combination. This program is recognized as a Professional Science Master's (PSM) program, approved by the National PSM Office.

Course Requirements

A culminating experience is required for this option. The graduate student works with the major professor and the supervisory committee to determine the parameters of the culminating experience.

Required Courses: 6 credit hours

AAI 801 - Interdisciplinary Process Credits: 3

AAI 858 - Capstone Experience I Credits: 1

AAI 859 - Capstone Experience II Credits: 2

Professional Skills: 9 credit hours

Professional Skills Electives – 9 credits selected from the following courses (or other graduate professional skills courses as approved by the student's supervisory committee):

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6

AAI 797 - U.S. Animal Politics and Policymaking Credits: 2
 AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
 AAI 842 - Strategies in the Stewardship of Licensed Pharmaceuticals and Biologics in Animal Health Credits: 1
 AAI 843 - Regulatory Development of Animal Pharmaceuticals - FDA Credits: 2
 AAI 844 - Regulatory Development of Animal Pesticides - EPA Credits: 2
 AAI 845 - Regulatory Development of Animal Biologics and Diagnostics - USDA Credits: 2
 AAI 846 - Special Topics: Regulatory Affairs in Animal Health Credits: 1
 AAI 860 - Introduction to Systems and Data in Animal Health Credits: 2
 AAI 861 - Research Strategies to Drive Development of Animal Health Products Credits: 2
 AAI 863 - Special Topics: Data Analytics and Insights in Animal Health Credits: 1
 AAI 870 - Seminar in Applied and Interdisciplinary Studies Credits: 1-6
 AAI 880 - Problems in Applied and Interdisciplinary Studies Credits: 1-6
 AAI 895 - Advanced Topics in Applied and Interdisciplinary Studies Credits: 5-6
 AAI 899 - Research in Applied and Interdisciplinary Studies Credits: 1-6
 ACCTG 710 - Foundations of Accounting Credits: 3
 AGECE 710 - Comparative Food and Agriculture Systems Credits: 3
 AGECE 750 - Agricultural Economics and Agribusiness Problems Credits: 1-18
 COT 703 - Project Management for Professionals Credits: 3
 COT 704 - Managerial Finances, Metrics, and Analytics Credits: 3
 COT 706 - Informatics and Technology Management Credits: 3
 DMP 815 - Multidisciplinary Thought and Presentation Credits: 3
 DMP 816 - Trade and Agricultural Health Credits: 2
 DMP 888 - Globalization, Cooperation, & the Food Trade Credits: 1
 EDACE 832 - Interpersonal and Intrapersonal Dynamics in Adult Learning and Leadership Credits: 3
 EDACE 834 - Leading Adults in a Globalized and Diverse World Credits: 3
 EDACE 835 - Developing Teams and Adult Leaders Credits: 3
 EDACE 836 - Group Dynamics in Adult Learning and Leadership Credits: 3
 EDACE 886 - Seminars in Adult Learning and Leadership Credits: 1-18
 MANGT 710 - Operations and Supply Chain Management Credits: 3
 MANGT 880 - Strategic Management Credits: 3
 POLSC 708 - Public Personnel Administration Credits: 3
 POLSC 710 - Policy Analysis and Evaluation Credits: 3
 POLSC 735 - Public Organization Theory Credits: 3
 POLSC 737 - Public Budgeting Credits: 3
 STEM: 15 credit hours

Statistics Electives: 3 credit hours

Statistics Electives – 3 credits selected from the following courses (or another graduate statistics course as approved by the student's supervisory committee):

STAT 701 - Fundamental Methods of Biostatistics Credits: 3
 STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3
 STAT 705 - Regression and Analysis of Variance Credits: 3
 STAT 713 - Applied Linear Statistical Models Credits: 3
 STAT 720 - Design of Experiments Credits: 3

Students choose the remaining 12 credit hours of STEM electives from their chosen track:

Animal Health Track

The courses in the animal health track provide students with knowledge of diseases that affect animals, as well as the interconnections among animals, humans, and the environment. When paired with the professional skills courses, students will be prepared to lead and manage in commercial, governmental, or nonprofit organizations related to the animal health industry.

Animal Health Track - STEM Electives: 12 credit hours

STEM Electives – 12 credits selected from the following courses (or graduate STEM courses within the disciplines indicated below, as approved by the student's supervisory committee):

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6
 AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
 AAI 841 - Strategies in Pre-Clinical and Clinical Research for Regulatory Affairs in Animal Science Credits: 2
 AAI 843 - Regulatory Development of Animal Pharmaceuticals - FDA Credits: 2
 AAI 844 - Regulatory Development of Animal Pesticides - EPA Credits: 2
 AAI 845 - Regulatory Development of Animal Biologicals and Diagnostics - USDA Credits: 2
 AAI 852 - Vaccinology Credits: 3
 AAI 870 - Seminar in Applied and Interdisciplinary Studies Credits: 1-6
 AAI 880 - Problems in Applied and Interdisciplinary Studies Credits: 1-6
 AAI 895 - Advanced Topics in Applied and Interdisciplinary Studies Credits: 5-6
 AAI 899 - Research in Applied and Interdisciplinary Studies Credits: 1-6
 AP 788 - Basic and Applied Pharmacokinetics Credits: 3
 AP 873 - Physiologically Based Pharmacokinetic Modeling Credits: 4
 AP 896 - Introduction to Responsible Conduct of Biomedical Research Credits: 2
 ASI 671 - Meat Selection and Utilization Credits: 2
 ASI 675 - Monogastric Nutrition Credits: 1
 ASI 678 - Equine Nutrition Credits: 1
 ASI 776 - Meat Industry Technology Credits: 3
 BAE 815 - Graduate Seminar 1: Literature Review Credits: 1
 BAE 820 - Topics in Biological & Agricultural Engineering Credits: 1-18
 DMP 710 - Introduction to One Health Credits: 2
 DMP 754 - Introduction to Epidemiology Credits: 3
 DMP 770 - Emerging Diseases Credits: 3
 DMP 802 - Environmental Health Credits: 3
 DMP 814 - Veterinary Bacteriology & Mycology Lecture Credits: 3
 DMP 844 - Global Health Issues Credits: 3
 DMP 846 - Foundations of Biosecurity Credits: 3
 DMP 850 - Immunology of Domestic Animals Credits: 3
 DMP 852 - Vaccinology Credits: 3
 DMP 870 - Pathobiology Seminar (MS) Credits: 1
 DMP 880 - Problems in Pathobiology (MS) Credits: 1-6
 DMP 888 - Globalization, Cooperation, & the Food Trade Credits: 1
 DMP 893 - Principles of Biosafety and Biocontainment Credits: 2
 DMP 895 - Topics in Pathobiology (MS) Credits: 0-18
 GRSC 645 - Pet Food Processing Credits: 3
 MPH 818 - Social and Behavioral Bases of Public Health Credits: 3
 Complimentary STEM Courses - a maximum of 6 credit hours
 (as part of the 12 STEM electives) can be selected from the following courses:

IMSE 605 - Advanced Industrial Management Credits: 3
 IMSE 802 - Advanced Topics in Industrial Engineering Credits: 1-18
 IMSE 806 - Engineering Project Management Credits: 3
 IMSE 991 - Advanced Topics in Decision Theory Credits: 3

Food and Security Track

The courses in the food safety and security track provide students with knowledge and skills in the areas of food science, food safety, horticulture, nutrition, and consumer science. When paired with the professional skills courses, students will be prepared to lead and manage in commercial, governmental, or nonprofit organizations related to the food industry.

Food Safety and Security Track - STEM Electives: 12 credit hours

STEM Electives – 12 credits selected from the following courses (or graduate STEM courses within the disciplines indicated below, as approved by the student's supervisory committee):

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6

AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
 AAI 870 - Seminar in Applied and Interdisciplinary Studies Credits: 1-6
 AAI 880 - Problems in Applied and Interdisciplinary Studies Credits: 1-6
 AAI 895 - Advanced Topics in Applied and Interdisciplinary Studies Credits: 5-6
 AAI 899 - Research in Applied and Interdisciplinary Studies Credits: 1-6
 ASI 671 - Meat Selection and Utilization Credits: 2
 ASI 776 - Meat Industry Technology Credits: 3
 BAE 815 - Graduate Seminar 1: Literature Review Credits: 1
 BAE 820 - Topics in Biological & Agricultural Engineering Credits: 1-18
 DMP 710 - Introduction to One Health Credits: 2
 DMP 754 - Introduction to Epidemiology Credits: 3
 DMP 802 - Environmental Health Credits: 3
 DMP 844 - Global Health Issues Credits: 3
 DMP 888 - Globalization, Cooperation, & the Food Trade Credits: 1
 FDSCI 600 - Food Microbiology Credits: 2
 FDSCI 601 - Food Microbiology Lab Credits: 2
 FDSCI 630 - Food Science Problems Credits: 0-6
 FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food Credits: 3
 FDSCI 695 - Quality Assurance of Food Products Credits: 3
 FDSCI 961 - Graduate Problem in Food Science Credits: 1-6
 FNDH 700 - Global Health and Nutrition Credits: 3
 SENS 701 - Sensory Analysis Credits: 3
 SENS 841 - Consumer Research - Fundamentals Credits: 1
 SENS 843 - Consumer Research - Qualitative Credits: 1
 FNDH 844 - Nutritional Epidemiology Credits: 3
 SENS 846 - Consumer Research – International and Special Populations Credits: 1
 SENS 848 - Consumer Research – Quantitative Credits: 1
 SENS 881 - Seminar in Sensory Analysis and Consumer Behavior Credits: 1
 HORT 725 - Postharvest Technology and Physiology of Horticultural Crops Credits: 3
 HORT 780 - Health-Promoting Phytochemicals: Fruits and Vegetables Credits: 2
 HORT 790 - Sustainable Agriculture Credits: 2
 HORT 791 - Urban Agriculture Credits: 2
 HORT 793 - Farm to Fork Produce Safety Credits: 2
 HORT 794 - Urban Food Systems Credits: 2
 HORT 795 - Urban Agriculture Study Tour Credits: 1
 MPH 818 - Social and Behavioral Bases of Public Health Credits: 3

Complimentary STEM Courses - a maximum of 6 credit hours

(as part of the 12 STEM electives) can be selected from the following courses:

IMSE 605 - Advanced Industrial Management Credits: 3
 IMSE 802 - Advanced Topics in Industrial Engineering Credits: 1-18
 IMSE 806 - Engineering Project Management Credits: 3
 IMSE 991 - Advanced Topics in Decision Theory Credits: 3

Industry Analytics Track

Courses in the Industry Analytics track focus on the application of data analytics across key sectors, including animal health, sensory, and food within the applied biosciences. While many programs offer data analytics broadly, this track is tailored specifically to applied biosciences.

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6
 AAI 852 - Vaccinology Credits: 3
 AAI 860 - Introduction to Systems and Data in Animal Health Credits: 2
 AAI 862 - Applied Analytics in Animal Health Credits: 3

AAI 863 - Special Topics: Data Analytics and Insights in Animal Health Credits: 1
AAI 864 - Introduction to Computing for Animal Health Credits: 3
AAI 865 - Assessing Effectiveness of Animal Therapeutics and Vaccines Credits: 1
AAI 867 - Zoonotic Pathogens in the Food Chain Credits: 2
ASI 650 - Identification and Data Management of Food Animals Credits: 2
DMP 710 - Introduction to One Health Credits: 2
DMP 754 - Introduction to Epidemiology Credits: 3
DMP 852 - Vaccinology Credits: 3
SENS 843 - Consumer Research - Qualitative Credits: 1
SENS 833 - Descriptive Sensory Analysis: Methods Credits: 1
SENS 848 - Consumer Research – Quantitative Credits: 1
SENS 851 - Sensory Analysis Applications of Statistics Credits: 2

Total Hours Required for Master's: 30

Professional Interdisciplinary Sciences Graduate Certificate

Location(s): Olathe Campus, Olathe Online

Offered by the School of Applied and Interdisciplinary Studies (Olathe Campus), this 12-credit program delivers scientific and technical skills in food, animal health, and related areas. After completion of the program, students will be able to 1) demonstrate ability to use information, concepts, analytical approaches, and critical thinking skills to transform ideas or solutions into entirely new forms, and 2) demonstrate the ability to perform in one or more disciplines. Students will take a foundation course in Interdisciplinary Process and courses in at least two disciplines. The Interdisciplinary Process course integrates methods and analytical frameworks to enable students to gain a more comprehensive understanding of complex issues and enhanced ability to address broad and multi-faceted challenges. Courses are offered online, face-to-face, and in combination.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Applied Biosciences at Kansas State University.

Course Requirements

Required Courses

AAI 801 - Interdisciplinary Process Credits: 3

Elective Courses

9 credits from at least two disciplines, determined by the course prefix. Elective courses can be included up to 3 credits per course selected from the following courses (or equivalent courses as approved by the student's supervisory committee for PSM students, or as approved by the PSM Program Director for certificate-only students):

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6
AAI 797 - U.S. Animal Politics and Policymaking Credits: 2
AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
AAI 841 - Strategies in Pre-Clinical and Clinical Research for Regulatory Affairs in Animal Science Credits: 2
AAI 842 - Strategies in the Stewardship of Licensed Pharmaceuticals and Biologics in Animal Health Credits: 1
AAI 843 - Regulatory Development of Animal Pharmaceuticals - FDA Credits: 2
AAI 844 - Regulatory Development of Animal Pesticides - EPA Credits: 2
AAI 845 - Regulatory Development of Animal Biologics and Diagnostics - USDA Credits: 2
AAI 846 - Special Topics: Regulatory Affairs in Animal Health Credits: 1
AAI 852 - Vaccinology Credits: 3
AAI 858 - Capstone Experience I Credits: 1
AAI 859 - Capstone Experience II Credits: 2
AAI 870 - Seminar in Applied and Interdisciplinary Studies Credits: 1-6
AAI 880 - Problems in Applied and Interdisciplinary Studies Credits: 1-6
AAI 895 - Advanced Topics in Applied and Interdisciplinary Studies Credits: 5-6
AAI 899 - Research in Applied and Interdisciplinary Studies Credits: 1-6
ACCTG 710 - Foundations of Accounting Credits: 3
AGEC 710 - Comparative Food and Agriculture Systems Credits: 3

AGEC 750 - Agricultural Economics and Agribusiness Problems Credits: 1-18
AP 788 - Basic and Applied Pharmacokinetics Credits: 3
AP 873 - Physiologically Based Pharmacokinetic Modeling Credits: 4
AP 896 - Introduction to Responsible Conduct of Biomedical Research Credits: 2
ASI 671 - Meat Selection and Utilization Credits: 2
ASI 675 - Monogastric Nutrition Credits: 1
ASI 678 - Equine Nutrition Credits: 1
ASI 776 - Meat Industry Technology Credits: 3
BAE 815 - Graduate Seminar 1: Literature Review Credits: 1
BAE 820 - Topics in Biological & Agricultural Engineering Credits: 1-18
COT 703 - Project Management for Professionals Credits: 3
COT 704 - Managerial Finances, Metrics, and Analytics Credits: 3
COT 706 - Informatics and Technology Management Credits: 3
DMP 710 - Introduction to One Health Credits: 2
DMP 754 - Introduction to Epidemiology Credits: 3
DMP 770 - Emerging Diseases Credits: 3
DMP 802 - Environmental Health Credits: 3
DMP 814 - Veterinary Bacteriology & Mycology Lecture Credits: 3
DMP 815 - Multidisciplinary Thought and Presentation Credits: 3
DMP 816 - Trade and Agricultural Health Credits: 2
DMP 844 - Global Health Issues Credits: 3
DMP 846 - Foundations of Biosecurity Credits: 3
DMP 850 - Immunology of Domestic Animals Credits: 3
DMP 852 - Vaccinology Credits: 3
DMP 870 - Pathobiology Seminar (MS) Credits: 1
DMP 880 - Problems in Pathobiology (MS) Credits: 1-6
DMP 888 - Globalization, Cooperation, & the Food Trade Credits: 1
DMP 893 - Principles of Biosafety and Biocontainment Credits: 2
DMP 895 - Topics in Pathobiology (MS) Credits: 0-18
EDACE 832 - Interpersonal and Intrapersonal Dynamics in Adult Learning and Leadership Credits: 3
EDACE 834 - Leading Adults in a Globalized and Diverse World Credits: 3
EDACE 835 - Developing Teams and Adult Leaders Credits: 3
EDACE 836 - Group Dynamics in Adult Learning and Leadership Credits: 3
EDACE 886 - Seminars in Adult Learning and Leadership Credits: 1-18
FDSCI 600 - Food Microbiology Credits: 2
FDSCI 601 - Food Microbiology Lab Credits: 2
FDSCI 630 - Food Science Problems Credits: 0-6
FDSCI 690 - Principles of HACCP and Preventive Controls for Human Food Credits: 3
FDSCI 695 - Quality Assurance of Food Products Credits: 3
FDSCI 961 - Graduate Problem in Food Science Credits: 1-6
FNDH 700 - Global Health and Nutrition Credits: 3
SENS 701 - Sensory Analysis Credits: 3
SENS 841 - Consumer Research - Fundamentals Credits: 1
SENS 843 - Consumer Research - Qualitative Credits: 1
FNDH 844 - Nutritional Epidemiology Credits: 3
SENS 846 - Consumer Research – International and Special Populations Credits: 1
SENS 848 - Consumer Research – Quantitative Credits: 1
SENS 881 - Seminar in Sensory Analysis and Consumer Behavior Credits: 1
HORT 725 - Postharvest Technology and Physiology of Horticultural Crops Credits: 3
HORT 780 - Health-Promoting Phytochemicals: Fruits and Vegetables Credits: 2
HORT 790 - Sustainable Agriculture Credits: 2
HORT 791 - Urban Agriculture Credits: 2
HORT 793 - Farm to Fork Produce Safety Credits: 2
HORT 794 - Urban Food Systems Credits: 2

HORT 795 - Urban Agriculture Study Tour Credits: 1
MANGT 710 - Operations and Supply Chain Management Credits: 3
MANGT 880 - Strategic Management Credits: 3
MPH 818 - Social and Behavioral Bases of Public Health Credits: 3
POLSC 708 - Public Personnel Administration Credits: 3
POLSC 710 - Policy Analysis and Evaluation Credits: 3
POLSC 735 - Public Organization Theory Credits: 3
POLSC 737 - Public Budgeting Credits: 3
STAT 701 - Fundamental Methods of Biostatistics Credits: 3
STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3
STAT 705 - Regression and Analysis of Variance Credits: 3
STAT 713 - Applied Linear Statistical Models Credits: 3
STAT 720 - Design of Experiments Credits: 3

Total Hours Required for Graduate Certificate: 12

Professional Skills for STEM Practitioners Graduate Certificate

Location(s): Olathe Campus, Olathe Online

Offered by the School of Applied and Interdisciplinary Studies (Olathe Campus), this 15-credit program provides the management, communication and critical thinking skills necessary for professionals in leadership roles in science, technology, engineering and mathematics fields. After completion of the program, students will be able to 1) understand the basics of project or program management, 2) demonstrate appropriate oral and written communication skills in a professional environment, and 3) synthesize professional skills in order to accurately implement innovative solutions. Students will take 12 credits of interdisciplinary professional skills courses and three credits of capstone experience courses, (Professional Science Master's degree-seeking students) or a Topics in Applied and Interdisciplinary Studies course (PSSP certificate-seeking students), which will provide opportunities to apply and integrate knowledge and methods to solve problems. Courses are offered online, face-to-face, and in combination.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Applied Biosciences at Kansas State University.

Course Requirements

Required Courses

AAI 858 - Capstone Experience I Credits: 1
AND

AAI 859 - Capstone Experience II Credits: 2
OR

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6

Note: Only students in the Professional Science Master's program may enroll in AAI 858 and AAI 859 since both courses require a supervisory committee. Students may not use AAI 795 to fulfill the Professional Science Master's capstone requirement.

Elective Courses

12 credits of electives selected from the following courses (or equivalent courses as approved by the student's supervisory committee for PSM students or as approved by the PSM Program Director for certificate-only students):

AAI 795 - Topics in Applied and Interdisciplinary Studies Credits: .5-6
AAI 797 - U.S. Animal Politics and Policymaking Credits: 2
AAI 801 - Interdisciplinary Process Credits: 3
AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
AAI 842 - Strategies in the Stewardship of Licensed Pharmaceuticals and Biologics in Animal Health Credits: 1
AAI 843 - Regulatory Development of Animal Pharmaceuticals - FDA Credits: 2
AAI 844 - Regulatory Development of Animal Pesticides - EPA Credits: 2

AAI 845 - Regulatory Development of Animal Biologicals and Diagnostics - USDA Credits: 2
AAI 846 - Special Topics: Regulatory Affairs in Animal Health Credits: 1
AAI 870 - Seminar in Applied and Interdisciplinary Studies Credits: 1-6
AAI 880 - Problems in Applied and Interdisciplinary Studies Credits: 1-6
AAI 895 - Advanced Topics in Applied and Interdisciplinary Studies Credits: 5-6
ACCTG 710 - Foundations of Accounting Credits: 3
AGEC 710 - Comparative Food and Agriculture Systems Credits: 3
AGEC 750 - Agricultural Economics and Agribusiness Problems Credits: 1-18
COT 703 - Project Management for Professionals Credits: 3
COT 704 - Managerial Finances, Metrics, and Analytics Credits: 3
COT 706 - Informatics and Technology Management Credits: 3
DMP 815 - Multidisciplinary Thought and Presentation Credits: 3
DMP 816 - Trade and Agricultural Health Credits: 2
DMP 888 - Globalization, Cooperation, & the Food Trade Credits: 1
EDACE 832 - Interpersonal and Intrapersonal Dynamics in Adult Learning and Leadership Credits: 3
EDACE 834 - Leading Adults in a Globalized and Diverse World Credits: 3
EDACE 835 - Developing Teams and Adult Leaders Credits: 3
EDACE 836 - Group Dynamics in Adult Learning and Leadership Credits: 3
EDACE 886 - Seminars in Adult Learning and Leadership Credits: 1-18
MANGT 710 - Operations and Supply Chain Management Credits: 3
MANGT 880 - Strategic Management Credits: 3
POLSC 708 - Public Personnel Administration Credits: 3
POLSC 710 - Policy Analysis and Evaluation Credits: 3
POLSC 735 - Public Organization Theory Credits: 3
POLSC 737 - Public Budgeting Credits: 3

Total Hours Required for Graduate Certificate: 15

Regulatory Affairs in Animal Health Graduate Certificate

Location(s): Olathe Online

Regulatory Affairs requires a specialized skill set, which combines the knowledge of animal science and veterinary medicine, with skill in navigating governmental processes and regulations.

Students in the Graduate Certificate in Regulatory Affairs in Animal Health will be able to 1) Demonstrate comprehensive understanding of the regulatory process and strategy for products approved by the FDA/EPA/USDA, 2) Identify the extent to which clinical research protocols establish the efficacy and safety of products compliant with regulatory guidelines for product development, and 3) Synthesize regulatory requirements with effective business practices while operating in a compliant manner. This certificate is offered by the School of Applied and Interdisciplinary Studies (Olathe Campus).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Applied Biosciences at Kansas State University.

Course Requirements

Required Courses

AAI 840 - Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry Credits: 2
AAI 841 - Strategies in Pre-Clinical and Clinical Research for Regulatory Affairs in Animal Science Credits: 2
AAI 842 - Strategies in the Stewardship of Licensed Pharmaceuticals and Biologics in Animal Health Credits: 1
AAI 843 - Regulatory Development of Animal Pharmaceuticals - FDA Credits: 2
AAI 844 - Regulatory Development of Animal Pesticides - EPA Credits: 2
AAI 845 - Regulatory Development of Animal Biologicals and Diagnostics - USDA Credits: 2
AAI 846 - Special Topics: Regulatory Affairs in Animal Health Credits: 1
STAT 703 - Introduction to Statistical Methods for the Sciences Credits: 3

The courses for the certificate can be applied to other Master's programs such as the Professional Science Master's degree or the M.S. in Veterinary Biomedical Science, after a student is accepted to the Master's program.

Total Hours Required for Graduate Certificate: 15

Courses

- AAI 795 Topics in Applied and Interdisciplinary Studies
- AAI 797 U.S. Animal Politics and Policymaking
- AAI 801 Interdisciplinary Process
- AAI 840 Regulatory Aspects of Drug and Vaccine Development in the Animal Health Industry
- AAI 841 Strategies in Pre-Clinical and Clinical Research for Regulatory Affairs in Animal Science
- AAI 842 Strategies in the Stewardship of Licensed Pharmaceuticals and Biologics in Animal Health
- AAI 843 Regulatory Development of Animal Pharmaceuticals - FDA
- AAI 844 Regulatory Development of Animal Pesticides - EPA
- AAI 845 Regulatory Development of Animal Biologicals and Diagnostics - USDA
- AAI 846 Special Topics: Regulatory Affairs in Animal Health
- AAI 852 Vaccinology
- AAI 858 Capstone Experience I
- AAI 859 Capstone Experience II
- AAI 860 Introduction to Systems and Data in Animal Health
- AAI 861 Research Strategies to Drive Development of Animal Health Products
- AAI 862 Applied Analytics in Animal Health
- AAI 864 Introduction to Computing for Animal Health
- AAI 870 Seminar in Applied and Interdisciplinary Studies
- AAI 880 Problems in Applied and Interdisciplinary Studies
- AAI 895 Advanced Topics in Applied and Interdisciplinary Studies
- AAI 899 Research in Applied and Interdisciplinary Studies

Mary Lynn and Warren Staley School of Leadership

Mary Tolar, Dean

257 Leadership Studies Building
785-532-6085
Fax: 785-532-6542
E-mail: leadership@k-state.edu
www.k-state.edu/leadership/

Since its inception in 1997, the Staley School of Leadership strives to fulfill each part of its mission statement: developing knowledgeable, ethical, caring, inclusive leaders for a diverse and changing world. We invite all to become a part of the Leadership Studies community and together we will continue to discover ways to learn about and engage fully in the mission of our program.

The School of Leadership continues to develop and grow. Grounded by its progressive spirit, commitment to collaboration, and devotion to a student-centered learning community, the School is building critical infrastructure to advance our programs and contribute to the discipline. By understanding, honoring, and preserving what works well, the School is creating a future for

Leadership Studies that values its legacy as a necessary component of successful innovation. As we continue to engage students in the central questions of purpose and values, highlight the need for ethical leaders at all levels, share a desire for all of us to commit to a lifetime of service and civic engagement, and open students to the need to continually learn and affirm different people and cultures--we are extending our legacy to the future.

A minor in Leadership Studies complements an academic major by combining theory and practice with an emphasis on personal leadership development. In addition to the minor, we have a certificate in nonprofit leadership. The Nonprofit Leadership Certificate will develop an individual's leadership capacity to better work, serve, and lead in nonprofit organizations. Drawing from leadership development theory and best practices, graduates will gain tangible skills in understanding the nonprofit sector and the unique considerations of leading within it.

The secondary major in Global Food Systems Leadership is intended for students who want to study and exercise leadership on the grand challenges of feeding a growing world population through a systems thinking approach. An interdisciplinary team from Kansas State University created the program with the goal of helping students enhance their preparation for a diverse range of careers that require integrated knowledge of the global food system and the leadership capacity to skillfully intervene to change the system for the common good.

The Leadership Communication doctoral program started in fall of 2018. The Leadership Communication program is an interdisciplinary research degree. This Doctor of Philosophy degree is rooted in leadership practices and communication processes that can be used to make progress on the most difficult challenges of our times. Through the study and practice of leading change students will produce original research that is grounded in community-engaged scholarship.

Our Programs-Service and Civic Engagement

The Staley School of Leadership is also focused on students' service and civic engagement and offers various programs for students (and faculty) to enhance social responsibility, citizenship, and awareness of community needs to improve the quality of life--on campus, in the community, and across the world.

- Academic Mentoring
- Applied Learning Experiences (ALE) Ambassadors
- Coffman Leadership Institute
- Food Security Scholars
- HandsOn Kansas State
- Service Teams Staley School of Leadership Studies Ambassadors
- Student Coordinators
- LEAD 212 Class Leaders
- Snyder School of Leadership Studies Leadership Legacy Fellows

Staley School of Leadership

Mary Tolar, Dean

257 Leadership Studies Building

785-532-6085

Fax: 785-532-6542

E-mail: leadership@k-state.edu

www.k-state.edu/leadership/

Since its inception in 1997, the Staley School of Leadership strives to fulfill each part of its mission statement: developing knowledgeable, ethical, caring, inclusive leaders for a diverse and changing world. We invite all to become a part of the

Leadership Studies community and together we will continue to discover ways to learn about and engage fully in the mission of our program.

The School of Leadership continues to develop and grow. Grounded by its progressive spirit, commitment to collaboration, and devotion to a student-centered learning community, the School is building critical infrastructure to advance our programs and contribute to the discipline. By understanding, honoring, and preserving what works well, the School is creating a future for Leadership that values its legacy as a necessary component of successful innovation. As we continue to engage students in the central questions of purpose and values, highlight the need for ethical leaders at all levels, share a desire for all of us to commit to a lifetime of service and civic engagement, and open students to the need to continually learn and affirm different people, places, and cultures—we are extending our legacy to the future.

A minor in Leadership Studies complements an academic major by combining theory and practice with an emphasis on personal leadership development. In addition to the minor, we have a certificate in nonprofit leadership. The Nonprofit Leadership Certificate will develop an individual's leadership capacity to better work, serve, and lead in nonprofit organizations. Drawing from leadership development theory and best practices, graduates will gain tangible skills in understanding the nonprofit sector and the unique considerations of leading within it.

The secondary major in Global Food Systems Leadership is intended for students who want to study and exercise leadership on the grand challenges of feeding a growing world population through a systems thinking approach. An interdisciplinary team from Kansas State University created the program with the goal of helping students enhance their preparation for a diverse range of careers that require integrated knowledge of the global food system and the leadership capacity to skillfully intervene to change the system for the common good.

The Leadership Communication doctoral program started in fall of 2018. The Leadership Communication program is an interdisciplinary research degree. This Doctor of Philosophy degree is rooted in leadership practices and communication processes that can be used to make progress on the most difficult challenges of our times. Through the study and practice of leading change students will produce original research that is grounded in community-engaged scholarship.

Our Programs-Service and Civic Engagement

The Staley School of Leadership is also focused on students' service and civic engagement and offers various programs for students (and faculty) to enhance social responsibility, citizenship, and awareness of community needs to improve the quality of life—on campus, in the community, and across the world.

- Academic Mentoring
- Alternative Breaks
- Coffman Leadership Institute
- Food Security Scholars
- HandsOn Kansas State
- International Service Teams
- Manhattan Good Neighbors
- Staley School of Leadership Studies Ambassadors
- Student Coordinators
- LEAD 212 Class Leaders
- Snyder Leadership Legacy Fellows

Doctor of Philosophy

Leadership Communication (PHD)

Contacts: Mary Tolar and Andrew Wefald
Email: leadership@k-state.edu
Phone: 785-532-6085

K-State's Leadership Communication doctoral program is an interdisciplinary research degree grounded in community-engaged scholarship. Here's what awaits you:

Challenging Coursework: Through coursework you will explore theories and methods of leadership, communication, and engagement to form new lenses to see and solve problems. You'll develop your methodological skill to conduct forms of engaged research.

Tailored Path: You will customize a plan of study relevant to your own pace, place, and purpose.

Research that Makes a Difference: Through your research you will help make progress on issues you and your communities care about.

A major cornerstone of K-State's Leadership Communication Ph.D. program is a community-engaged approach to teaching, learning, and research. Doctoral students study and practice the art of leading change to produce original research that is grounded in this approach.

Admission Requirements:

A minimum of 90 credit hours are required for the doctor of philosophy degree. Students already holding an applicable master's degree, or who have completed other post-baccalaureate work upon admission, can count 30 credits toward the 90 credits required for the doctorate.

Course Requirements

Required Courses: 18 credit hours

- LEAD 814 - Graduate Studies in Leadership Communication **Credits: 3** Crosslisted: COMM 814 / AGCOM 814
- LEAD 815 - Seminar in Leadership Communication **Credits: 1** Crosslisted: COMM 815 / AGCOM 815
This seminar is offered each semester. Students must enroll for a minimum of 3 credit hours over 3 semesters.
- LEAD 820 - Contemporary Perspectives on Leadership Theory and Practice **Credits: 3**
- LEAD 845 - Approaches to Public/Community Engagement **Credits: 3** Crosslisted: COMM 845 / AGCOM 845
- COMM 916 - Communication Theories and Engagement **Credits: 3** Crosslisted: AGCOM 916
- LEAD 945 - Social Science Research for Public Problem Solving **Credits: 3** Crosslisted: COMM 945 / AGCOM 945

Research Methodologies: Minimum of 12 credit hours

- COMM 821 - Experimental Research in Communication Studies **Credits: 3**
- COMM 822 - Field Research in Communication Studies **Credits: 3**
- EDCEP 817 - Statistical Methods in Education **Credits: 3**
- EDCEP 917 - Experimental Design in Educational Research **Credits: 3**
- EDLEA 838 - Qualitative Research in Education **Credits: 3**
- EDLEA 938 - Advanced Data Analysis in Qualitative Methods **Credits: 3**

- EDLEA 948 - Data Representation and Writing in Qualitative Research **Credits: 3**
- EDLEA 848 - Understanding Theoretical Frameworks **Credits: 3**
- EDLEA 928 - Organizational Leadership in Education **Credits: 3**
- EDLEA 958 - Case Study in Qualitative Research **Credits: 3**
- EDLEA 968 - Discourse Analysis **Credits: 3**
- EDLEA 978 - Qualitative Data Management and Analysis Using Nvivo **Credits: 3**
- EDLEA 988 - Differentiated Research **Credits: 3**
- GEOG 801 - Seminar in Qualitative and Mixed Methods Research **Credits: 3**
- PLAN 803 - Community Research Methods **Credits: 3**
- POLSC 900 - Advanced Research Methods I **Credits: 3**
- POLSC 901 - Advanced Research Methods II **Credits: 3**
- PSYCH 802 - Psychological Research Design and Analysis I **Credits: 3**
- PSYCH 805 - Psychological Research Design and Analysis II **Credits: 3**
- SOCIO 824 - Qualitative Methodology **Credits: 3**
- SOCIO 825 - Quantitative Methods **Credits: 3**
- SOCIO 822 - Introduction to Methods of Social Analysis **Credits: 3**

Additional Requirements:

Beyond the core and methods courses, students must complete an additional 30 credit hours. A minimum of 15 credit hours must be from dissertation research hours. The remaining 15 credit hours may come from either elective coursework or more dissertation research hours.

Dissertation Research: 15-30 credit hours

Completion of a dissertation which examines a topic congruent with the program of study using a systematic methodology consistent with accepted research paradigms; the dissertation must be successfully defended in a public, oral defense.

- LEAD 999 - Research in Leadership Communication **Credits: 1-15**
Crosslisted: COMM 999 / AGCOM 999

Electives: 0-15 credit hours

Students will work with their committees to select 0-15 credit hours of elective courses appropriate for their programs of study. Example courses include:

- COMM 790 - Deliberation & Dialogue Theory **Credits: 3**
- COMM 831 - Deliberation & Dialogue Process Models **Credits: 3**
- COMM 832 - Dialogue, Deliberation, and Public Engagement: Core Skills and Strategies **Credits: 3**
- COMM 833 - Dialogue, Deliberation, and Public Engagement: Capstone Experience **Credits: 3**
- EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice **Credits: 3**
- EDACE 817 - Reflective Practice in Social Justice Education **Credits: 3**

Program Total Credits: 60

Master's degree Transfer Credits: 30

Total Hours Required for Doctorate: 90

Graduate Certificate

Leading Change Graduate Certificate

Contact: Dr. Kerry Priest
Phone: 785-532-6085
E-mail: kerry@ksu.edu
www.k-state.edu/leadership/

Through the Leading Change Graduate Certificate, you will engage in leadership learning and development needed for social innovation and systems change. You will develop the capacity to navigate increasingly complex environments and challenges and gain transformative skills to exercise leadership in your personal, professional, and civic life. The coursework will prepare you to lead change across teams, organizations, and society. Regardless of profession, discipline, or industry, you will build confidence in your ability to create change and inspire diverse groups of people to work together for a more prosperous future for all.

This certificate may connect with one or more master degree programs. At the recommendation of the academic program, students may apply credits earned through this graduate certificate completion towards a graduate program at Kansas State University, provided that all Graduate School policies are fulfilled.

Admission Requirements

- All students are required to meet the general university admission requirements.
- Exceptions granted for 2.8 GPA on probationary status.

Graduation Requirements

The minimum grade requirements for certificate programs are the same as those for graduate degrees. For graduate credit, the grade in a course must be C or higher. To remain in good standing, a student must maintain a cumulative GPA of 3.0 or higher.

Course Requirements

Required Courses

9 credit hours

- LEAD 750 - Leading Change Credits: 3
- LEAD 755 - Systems Leadership Credits: 3
- LEAD 701 - Foundations of Leadership Credits: 3

Elective Courses

Elective coursework is included from across profession, discipline, or industry, to support the interdisciplinary work of change processes. 3 credit hours

- CDPLN 700 - Foundations of Community Development Credits: 3

- CDPLN 705 - Organizing for Community Change **Credits: 3**
- CNRES 754 - Organizational Conflict **Credits: 3**
- EDACE 816 - Foundations of Social Justice Education: Research, Theory, and Practice **Credits: 3**
- EDACE 832 - Interpersonal and Intrapersonal Dynamics in Adult Learning and Leadership **Credits: 3**
- EDACE 836 - Group Dynamics in Adult Learning and Leadership **Credits: 3**
- HDFS 714 - Program Design, Evaluation, and Implementation **Credits: 3**
- HDFS 719 - Program Administration and Management **Credits: 3**
- LEAD 700 - Nonprofit Leadership Concepts **Credits: 3**
- LEAD 708 - Facilitating Leadership in Complex Adaptive Systems **Credits: 3**
- LEAD 720 - Leadership Coaching **Credits: 0-3**
- LEAD 845 - Approaches to Public/Community Engagement **Credits: 3**
- MANGT 720 - Managing Organizational Behavior **Credits: 3**
- MANGT 840 - Advanced Entrepreneurship **Credits: 3**
- MANGT 860 - Managing the Triple Bottom Line Business **Credits: 3**
- POLSC 708 - Public Personnel Administration **Credits: 3**
- POLSC 735 - Public Organization Theory **Credits: 3**

Total Hours Required for Graduate Certificate: 12

Nonprofit Leadership Graduate Certificate

Contact: Dr. Chance Lee
 Email: chance@ksu.edu
 Phone: 785-532-6085
www.k-state.edu/leadership/

The Nonprofit Leadership Graduate Certificate builds student capacity to exercise leadership within the unique context of a nonprofit organization. Students will gain skills in leading change and teams in mission-driven organizations, raising funds, navigating board relationships, championing a cause, and engaging volunteers.

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Public Administration at Kansas State University.

Admission Requirements

Bachelor's degree with a 3.0 minimum GPA in the final two years or approximately the last 60 credit hours. Exceptions granted for 2.8 GPA on probationary status. This admission requirement is in line with the requirements for the MPA program.

Graduation Requirements

Current graduate students will complete the core curriculum and elective requirements, outlined above. Upon completion, students will complete the Graduate Certificate Completion form from the Graduate School.

Students only seeking the Nonprofit Leadership Certificate will complete the application process, outlined by the graduate school. Approvals will be administered by the Nonprofit Leadership Program Director at the Staley School.

Course Requirements

Required Courses

12 credit hours

- LEAD 700 - Nonprofit Leadership Concepts Credits: 3
- LEAD 701 - Foundations of Leadership Credits: 3
- POLSC 736 - Strategic Management of Public and Nonprofit Organizations Credits: 3
- POLSC 740 - Nonprofit Financial Management Credits: 3

Elective Courses

3 credit hours

- CDPLN 633 - Grantwriting Credits: 3
- CDPLN 700 - Foundations of Community Development Credits: 3
- CDPLN 705 - Organizing for Community Change Credits: 3
- CDPLN 713 - Nonprofit Management Credits: 3
- ENTRP 825 - Strategic Innovation Credits: 3
- LEAD 845 - Approaches to Public/Community Engagement Credits: 3
- HDFS 714 - Program Design, Evaluation, and Implementation Credits: 3
- HDFS 719 - Program Administration and Management Credits: 3
- HDFS 801 - Grant Development and Management Credits: 3
- HDFS 893 - Evaluation of Prevention Science Programs Credits: 3
- MANGT 860 - Managing the Triple Bottom Line Business Credits: 3
- POLSC 702 - Public Administration and Society Credits: 3
- POLSC 708 - Public Personnel Administration Credits: 3
- POLSC 737 - Public Budgeting Credits: 3
- POLSC 738 - Public Finance Credits: 3
- POLSC 739 - Intergovernmental Relations Credits: 3

Total Hours Required for Graduate Certificate: 15

Interdisciplinary Programs

Biochemistry

Michal Zolkiewski, Head

Timothy Durrett, Director of graduate studies

Om Prakash, Admissions Chair

141 Chalmers Hall

785-532-6121

Fax: 785-532-7278

gbiochem@ksu.edu

<http://www.k-state.edu/bmb/>

Biochemistry and Molecular Biophysics is an interdepartmental graduate program with faculty participants from many academic departments of the University.

Overview

Biochemistry and Molecular Biophysics explores the molecular basis of life processes. It examines structure, function, assembly, and dynamic changes of macromolecules and the chemistry and dynamics of small molecules. Through use of recombinant DNA technology and new instrumentation, a revolution is underway in our understanding of the ways that plants and animals regulate metabolic processes and express genetic information. Researchers at Kansas State University are in the forefront of that revolution. The study of biochemistry at Kansas State University is conducted under a versatile arrangement through which faculty of the Department of Biochemistry and Molecular Biophysics and faculty in other departments cooperate in a graduate biochemistry program. Both fundamental questions about living processes and applications to living systems are supported in this interdisciplinary program.

Degree programs

The biochemistry and molecular biophysics program seeks excellence in teaching and research through a program tailored to the development of the individual student. The core curriculum is broad and students are expected to specialize through appropriate choice of advanced courses from the many offerings taught by faculty in their areas of research expertise. A strong seminar program involves presentations by eminent visiting scholars from around the world and by the faculty of many departments on campus. A graduate student seminar program provides further opportunity for acquiring insights into new developments in the field.

The Graduate Biochemistry and Molecular Biophysics Group administers granting of M.S., B.S./M.S., and Ph.D. degrees in biochemistry whether the research is conducted within the Department of Biochemistry or in other cooperating departments. The program of study is flexible, accommodating students with a wide range of backgrounds, including genetics, microbiology, physics, and medicine as well as the traditional chemistry, biochemistry, and biology degrees. Students are admitted to either the M.S. or the Ph.D. program based on qualifications, which include undergraduate and graduate performance, letters of recommendation, and program of study deficiencies.

In biochemistry and molecular biophysics, both the Ph.D. and the M.S. degrees are considered research degrees. Thus, in addition to specific course requirements, there is a requirement for writing a thesis based on independent and original research conducted in the laboratory of one of the participating faculty members.

Students in either the M.S. or Ph.D. degree program take the two-semester, comprehensive, core biochemistry courses Biochemistry I and II and a one-semester course in molecular biophysics. All students are expected to attend the weekly graduate student seminar and individual research group meetings.

Financial support of graduate students

Within the Department of Biochemistry and Molecular Biophysics, support for graduate teaching assistants is through the College of Arts and Sciences. Graduate research assistants are supported through the Agricultural Experiment Station and by research grants. Usually a student is admitted to the graduate program in biochemistry and molecular biophysics only if university funds are available for salary support or if the student has another source of support such as a government (U.S. or other) fellowship. U.S. citizens with a strong undergraduate record can apply for NSF predoctoral fellowships. Some supplements to teaching and research support are available on a competitive basis from the Graduate School for outstanding U.S. students.

Incoming students receive half of their support in the form of teaching assistantships (requiring six contact hours per week) and half in the form of a research assistantship. After the first year, the teaching assistantship may be replaced by extramural support. This is expected for Ph.D. candidates beyond their third year of study.

Graduate students in the B.S./M.S. dual degree program will not be expected to teach and will not be supported by departmental teaching or research assistantships. They are eligible for support as research assistants in laboratories of individual faculty members.

Student fees

For graduate teaching assistants and graduate research assistants, student fees are assessed at the in-state level. Students receiving such support are required to enroll in 6 credit hours each semester. A waiver of half the tuition costs is provided to those supported as combined graduate teaching/research assistants.

Research environment and facilities

More than two dozen faculty members are formally associated with the Graduate Biochemistry and Molecular Biophysics Group. Many others with interests in biochemistry and molecular biology are collaborative investigators and participants on graduate student supervisory committees. The research environment in biochemistry is exciting and vigorous because of these diverse but interacting programs. Our graduates compete favorably with those from the world's best programs because they are well trained in biochemical literature and research techniques. Members of the group currently receive more than \$3 million per year in outside research funds. These funds support technicians, postdoctoral fellows, and some graduate research assistants at later stages of their career. They also allow purchase of up-to-date research equipment and supplies.

The Department of Biochemistry and Molecular Biophysics has 14 large research suites. Ten are located in Chalmers Hall. That building also houses the department's teaching laboratories. The other research suites are located in Burt Hall. The department is well equipped for advanced research in a wide range of areas. NMR studies are conducted within the NMR Facility using Varian 500 MHz Unity Plus NMR with triple channel detection, pulsefield gradient, and high stability temperature control and waveform generation. Other biophysical studies are conducted with conventional and magnetic circular dichroism, fluorescence spectroscopy with fluorescence polarization capability and UV-Visible differential scanning spectroscopy. A new analytical ultracentrifuge (Beckman XL-I), micro calorimeters (MicroCal VP-DSC and isothermal titration calorimeter), and a surface plasmon resonance instrument (Biacore 3000) enhance studies of macromolecule interactions and folding properties.

The department has equipment and technical capability for gene cloning (supported by polymerase chain reaction capabilities) and all varieties of electrophoresis experiments. For preparative procedures the department has multiple ultracentrifuges, high performance liquid chromatographs, and facilities for both anaerobic enzyme preparations and large scale preparations of subcellular organelles. The department has several cold rooms, animal cell culture facilities, instrument rooms, and dark rooms. Facilities are available for housing animals and growing plants year-round. Analytical instruments include scintillation counters, gamma counters and scanning spectrophotometers.

The university Biotechnology Core Facility is housed within the Department of Biochemistry and Molecular Biophysics and provides both instruments and expertise for mass spectrometry of biopolymers, oligonucleotide synthesis, peptide synthesis and gas-phase peptide sequencing. High resolution purification of peptides and synthesis of peptides containing non-natural amino acids are areas of special interest. The mass spec capabilities include high throughput screening of peptides.

Additional facilities are also available on campus: DNA sequencing, fluorescence-activated cell sorting, electron microscopy (transmission and scanning), quasi-elastic light scattering, GLC-mass spectrometry, emission spectrometry, Fourier-transform infrared spectrometry, atomic absorption and stopped flow kinetics. High resolution GLC-mass spec is used for lipidomics studies. Parallel computing, mini super-computers, and ethernet and internet networks are available throughout the campus.

Job opportunities

Biochemistry and molecular biology are growth areas in the economy of the 21st century. Graduate training in biochemistry and molecular biophysics provides a strong base for varied academic and technological careers. Our Ph. D. and postdoctoral graduates find positions not only in departments of biochemistry, biophysics, and molecular biology, but also in biology, chemistry, pharmacology, nutrition and medicine. Doctoral graduates find positions requiring independent work in a wide range of industries including biotechnology, chemistry, pharmacology, medicine, and food technology. M.S. graduates occupy skilled

technical positions in industry, government and academic research laboratories. Many also continue for the Ph.D. at this or other institutions.

Data Analytics and Insights in Animal Health

Data Analytics and Insights in Animal Health Graduate Certificate

Data analytics in the animal health industry requires a specialized skill set, which combines the knowledge of animal science and data analytics, with skill in applying the data to impactful decision making. Students in the Data Analytics and Insights in Animal Health Graduate Certificate will be able to:

1. Exhibit broad comprehension of animal health
2. Demonstrate in depth understanding of programming and data management tools
3. Apply appropriate mathematical methodologies to animal systems
4. Implement strategic use of data analytics for business applications, including animal health research and commercial insights

The courses for the certificate can be applied to other Master's programs such as the M.S. in Applied Biosciences or the M.S. in Veterinary Biomedical Science, after a student is accepted to the Master's program.

This certificate is housed in the School of Applied and Interdisciplinary Studies. Students interested in this program should contact Dr. Paige Adams (apadams@ksu.edu) or Dr. Douglas Shane (ddshane@ksu.edu).

After earning the graduate certificate, students may apply credits earned through the graduate certificate completion towards a Master of Applied Biosciences at Kansas State University.

Admission Requirements

- A bachelor's degree from a college or university accredited by a regional or national institutional accrediting agency recognized by the U.S. Department of Education.
- Undergraduate preparation in the proposed major field equivalent to that acquired by a graduate of Kansas State University, or evidence of an appropriate background for undertaking an advanced degree program, and
- Cumulative grade point average (GPA) of 3.0 or higher on a 4.0 scale or GPA of 3.0 in the last 60 hours of coursework.

Course Requirements

Required Courses

- AAI 860 - Introduction to Systems and Data in Animal Health **Credits: 2**
- AAI 861 - Research Strategies to Drive Development of Animal Health Products **Credits: 2**
- AAI 862 - Applied Analytics in Animal Health **Credits: 3**
- AAI 863 - Special Topics: Data Analytics and Insights in Animal Health **Credits: 1**

Electives Courses

Choose 7 credit hours from the following courses:

Animal Health-related:

- AAI 795 - Topics in Applied and Interdisciplinary Studies **Credits: .5-6 ***
- AAI 852 - Vaccinology **Credits: 3**

- AAI 865 - Assessing Effectiveness of Animal Therapeutics and Vaccines **Credits: 1**
- AAI 867 - Zoonotic Pathogens in the Food Chain **Credits: 2**
- DMP 710 - Introduction to One Health **Credits: 2**
- DMP 754 - Introduction to Epidemiology **Credits: 3**
 * Can also be applied as a math-related elective
 Math-related:
 - AAI 864 - Introduction to Computing for Animal Health **Credits: 3**
 - MATH 896 - Topics in Mathematics **Credits: .5-18**
 - MKTG 880 - Applied Marketing Analytics **Credits: 3**
 - STAT 703 - Introduction to Statistical Methods for the Sciences **Credits: 3**
 - STAT 705 - Regression and Analysis of Variance **Credits: 3**

Total Hours Required for Graduate Certificate: 15

The Graduate Certificate in Data Analytics and Insights in Animal Health curriculum is 15 credit hours, which is comparable to other graduate certificates at Kansas State University. Students in the program will be closely advised on the appropriate selection of elective courses, depending on the educational background and professional experience of the student. All of the AAI courses proposed for the certificate can be applied to the Applied Biosciences Master's degree, after a student is accepted to the Master's program, upon approval of the student's supervisory committee. A separate Curriculum proposal will be submitted to formally add the courses to the Applied Biosciences Master's degree. It is anticipated that the courses from the certificate will fulfill the STEM and/or Professional Skills requirements. All the courses in the Graduate Certificate in Data Analytics and Insights in Animal Health can also be applied to the M. S. in Veterinary Biomedical Science.

Environmental Design and Planning

Anne Beamish, Director of Graduate Studies

2132 Regnier Hall
 785-532-5950
 Fax: 785-532-1086
phdinfo@ksu.edu
<http://apdesign.k-state.edu/>
<https://apdesign.k-state.edu/academics/degrees-and-programs/phd-program/>

Overview

Since the founding of the College in 1963, the faculty has based their relationships on the mutually held realization that the practice of any one of the design professions benefits from the interaction of their varied approaches to (re)shaping the built environment. The interdisciplinary doctoral program takes advantage of the diverse but interrelated nature of the college's design and planning disciplines. The Ph.D. program represents the comprehensive nature of our professional community and reflects how our faculty and the profession interact in practice.

The Environmental Design and Planning Ph.D. at the College of Architecture, Planning and Design is an interdisciplinary research-based degree program, with the aim of contributing to a more livable and ecologically-sustainable society. Our doctoral students are members of the College at-large, rather than a particular department, allowing students to draw from the sizeable and wide-ranging knowledge of faculty from the university and all three of our departments:

- Architecture,
- Interior Architecture and Industrial Design, and
- Landscape Architecture and Regional & Community Planning.

This program is designed to prepare graduates to teach at the graduate level and/or conduct research. In addition to teaching, our graduates also are well-equipped to undertake research to inform design and/or planning for governmental, environmental, and planning agencies; developers; professional design firms; and international corporations that focus on environmental stewardship.

Areas of Emphasis

Our Ph.D. students undertake a wide range of research, but most topics are in one of the following interconnected areas:

- **Design** emphasizes the role of the designed environment in contributing to human well-being and provides opportunities, through practice and research, to explore issues that include pedagogy, neuroscience, perception, sustainability, history, and theory.
- **Planning** considers the theory and methods of public decision-making and the development of models and tools to understand and improve decision-making processes, both public and private.
- **Sustainability** explores ways by which the design and planning professions can better provide for the environmental and resource needs of people without sacrificing the ability of future generations to meet their needs.
- **Place Making** explores the importance of place in human life and considers ways by which design and policy might help to create robust, engaging, and supportive human environments.

Admission procedures

Previous Degrees. Applicants are normally expected to have earned a master's degree in the design or planning fields, but applicants with a master's degree in other fields may also be considered on a case-by-case basis.

Major Professor/Advisor. One member of the core Ph.D. faculty must accept mentorship responsibility for any student prior to their admittance to the doctoral program. Applicants are strongly encouraged to be in contact with Ph.D. faculty members with whom they share interests, and if possible, obtain a commitment from a faculty member to support their application.

Application Review Committee. Even with faculty commitment, the application must be reviewed and approved by the PhD committee before an offer of acceptance can be made.

Application Requirements

- K-State Graduate School application
- **3.0 grade point average** (on a 4.0 scale) in all higher education to-date.
- **Transcripts:** Include transcripts from any institution of higher education you have attended.
- **Statement of intent:** Statement of intent should be one to two pages and should include the prospective student's background, research interests, objectives, and reason for applying to the program.
- **Research Proposal:** This is a short (approximately 5 page) proposal that outlines the student's intended research. The proposal should be in standard form (i.e. Introduction (problem, importance, goals, research question); Background (literature review); Research Design (methodology and methods). The research will likely change after completing the coursework and consulting with the major professor, but the proposal will help us better understand the student's interests.

- **Evidence of Past Research:** The "portfolio" should include the prospective student's work, whether design projects, research projects, samples of written work, or other examples of creative and/or research efforts. **We are particularly interested in seeing evidence of previous research and published scholarly writing.**
- **Letters of recommendation:** Three letters of recommendation are required. At least two should be from academic references.
- **GRE score report:** Ph.D. applicants should have attained a score of 300 or better on the combined verbal and quantitative components of the GRE. Analytical writing should be 4.0 or above.
- **TOEFL/IELTS report (international students):** Prospective international students are required to have attained a minimal TOEFL score of 100, or a minimal IELTS score of 7.0. We accept TOEFL iBT's new set of scores called MyBest scores.
- **Financial statement** (international students)
- **Application fee** (Domestic \$90 and International \$100)

PhD requirements

The PhD program requires four years of full-time on-campus study.

All doctoral students with a previous master's degree are required to take a minimum total of 60 credit hours — a minimum of 30 credit hours of coursework in addition to 30 credit hours of doctoral research. The coursework must include: 2 mandatory ENVD courses (ENVD900 and 901), 2 research tool courses, 2 cross-disciplinary elective seminars, 1 APDesign seminar, 1 course outside of APDesign, and 6 credit hours of independent study or other coursework. All courses must be selected in consultation with the student's major professor (committee chair).

In addition to the coursework and doctoral research, students will submit an approved dissertation proposal, complete a written and oral preliminary exam, submit an approved dissertation, and complete an oral dissertation defense.

Dissertation Research Proposal. The student will complete a written document about their proposed research and present their proposal to the committee. The student's doctoral committee will then have the opportunity to discuss and provide written feedback. The committee must approve the proposal.

Preliminary examination. Students who have filed their program of study with the Graduate School and have completed at least 21 of the 30 hours of coursework with a grade point average of 3.0 or better, and who have an approved dissertation proposal are eligible to take the preliminary examination. The preliminary examination consists of both a written and oral exam. The purpose of the preliminary examination is to test the student's breadth and depth of knowledge in the proposed field of specialization, as well as the student's ability to explore problems on the boundaries of knowledge. Satisfactory performance in the examination is an indication that the student is prepared to perform independent work toward the doctoral degree. After passing the preliminary exam, the student advances to candidacy and becomes a doctoral candidate.

Writing the Dissertation. The PhD student will complete 30 credit hours of ENVD 999 (Dissertation Research). The dissertation will be a cohesive, original, and an independent contribution to scholarship. The research is to be performed under the guidance of the major professor and the supervisory committee and must be acceptable to them. The dissertation must follow guidelines outlined by the Graduate School.

Dissertation Defense. A final oral examination in defense of the dissertation will be conducted and evaluated by the doctoral committee. Two weeks prior to the dissertation defense the written dissertation will be available for review by the doctoral committee, other faculty, and graduate students. Other faculty and students are encouraged to attend the defense.

Food Science

216 Call Hall
785-532-4057
Fax: 785-532-5861
foodsci@k-state.edu
<http://www.foodsci.k-state.edu>

The Food Science interdepartmental graduate program is part of the Food Science Institute and includes graduate faculty housed in five colleges and eleven departments.

Institute Director:

Jeanette Thurston

Director of graduate studies:

J. Scott Smith

About the Program

The food science graduate program involves the interrelationships of about 46 professionals from 11 departments. Faculty from five colleges (agriculture, arts and sciences, engineering, human ecology, and veterinary medicine) have participated in the interdisciplinary food science masters and doctoral programs since 1965. Graduate faculty are located in the Departments of Agricultural Economics, Animal Sciences and Industry, Biochemistry; Biological and Agricultural Engineering; Chemical Engineering; Communications and Agricultural Education, Entomology, Diagnostic Medicine/Pathobiology; Geography, Grain Science and Industry; Hospitality Management; and Food, Nutrition, Dietetics, and Health.

Graduate students conduct their research in one of the participating departments. The food science faculty are involved in research on the chemical, microbiological, sensory, and nutritional aspects, functional characteristics, and processing of foods. Faculty with expertise in chemical analysis, instrumental analysis, sensory analysis, systems analysis, biochemistry, dietetics, statistics, microbiology, thermodynamics, rheology, biochemical engineering, and food engineering participate in the food science program.

Research facilities related to animal products include complete dairy and red-meat processing facilities, well-equipped research laboratories for red meat, poultry and dairy research, food chemistry, and food microbiology research laboratories. Research facilities for cereals include a complete pilot plant for milling grain into flour, complete baking research facilities, laboratory for extrusion research, well-equipped laboratories for cereal chemistry, a specialized cereal science library, and other supporting facilities. The flavor and sensory evaluation laboratories and instrumentation for physical, histological, and biochemical analysis of food products are also available. Laboratory facilities for food engineering research include ultrafiltration cells, instrumental fermenters, gas and liquid chromatography, an elemental analyzer, and an environmental chamber with temperature and humidity control. Facilities and instrumentation for food safety studies are available.

Graduate study in food science provides training for a number of varied academic and technical careers. Food processing is a leading industry in the United States so the need for food scientists is growing.

Admission

The application should be submitted by December 15 for Fall admission and June 15 for Spring admission for international students and February 1st for Fall admission and September 15th for Spring admission for domestic students. For those applying

to the online program application should be submitted by April 15 for Fall admission and September 15 for Spring admission, and preferably earlier to ensure availability of a major professor. Admission is highly competitive and not all applicants are admitted. All prospective students must submit the following online: application form, application fee, statement of objectives, official transcripts, three letters of recommendation, and GRE scores. Seniors and master's students may submit a current transcript and, if admitted, will receive provisional acceptance pending submission of an official transcript showing completion of a bachelor's degree, or M. S. degree for doctoral applicants. It is imperative that the statement of objectives contain a specific area of study within food science, i.e., food chemistry, food microbiology, cereals, red meat, or sensory analysis, so that the application may be directed to the appropriate faculty. Terms such as food processing and food technology are too general and may result in rejection because of lack of specificity.

International students must submit a TOEFL score of at least 550 (paper), 79 (IBT), 6.5 (IELTS) or 58 for Pearson Test of English (PTE) or have received a degree in the last two years from a United States college or university. In addition, an affidavit of the financial form must be completed and signed by a sponsor and a financial institution to show evidence of support for the entire program of study.

All applications will be reviewed by three appropriate members of the food science graduate admission committee. A faculty member must be willing to act as a major advisor prior to submission of credentials to the graduate school.

Research and teaching assistantships administered by the individual departments are available on a limited basis. Those receiving assistantships pay in-state fees. Members of the food science program obtain funds from the Agricultural and Engineering Experiment Stations and outside research funds that help sponsor some graduate research assistants. Currently, research stipends are competitive but may vary by department.

General requirements for entering graduate study in food science are: (1) calculus; (2) statistics; (3) biochemistry; (4) organic chemistry; (5) a course in physics; (6) an introductory course in microbiology; and (7) a course in botany, zoology, or biology. The student's supervisory committee will resolve course deficiencies. Certain programs within Food Science may require additional courses.

When the student's committee believes it is necessary, the student will be required to take additional undergraduate courses to prepare more completely for the individual program.

Candidates for degrees are expected to select courses that provide adequate coverage in several food areas, with primary emphasis in one or more areas.

The M.S./Ph.D. program of study shall be expected to include courses in biochemistry, statistics, food microbiology, food chemistry, and food processing/food engineering. No more than 6 credit hours at the 500 level will be accepted. One credit of food science seminar for the M.S. degree and 2 credits of food science seminar for the Ph.D. degree shall be included. There is no foreign language requirement.

Course requirements will be evaluated by the student's supervisory committee. The chairman of the food science graduate program must approve members of the student's advisory committee and the program of study.

Genetics

Chris Toomajian, Director of graduate studies

4024 Throckmorton Hall

785-532-6176

Fax: 785-532-5692

genetics@ksu.edu

<http://www.ksre.ksu.edu/genetics/>

Genetics is an interdepartmental graduate program with faculty participants from many academic departments of the University.

Program overview

The Genetics Graduate Program is sponsored by several departments to offer specialized education in genetics to students in multidisciplines. Graduate work leading to M.S. and Ph.D. degrees in Genetics is administered by the faculty of participating departments. These departments are Agronomy; Animal Science and Industry; Biochemistry; Entomology; Horticulture, Forestry, and Recreation Resources; Plant Pathology; Veterinary Medicine; and the Division of Biology. The genetics program consists of 35 graduate faculty members and about 20 graduate students, in addition to visiting scientists, and postdoctoral fellows. All faculty members direct active research projects, and there is a high degree of interaction and cooperation among researchers in various areas of genetics.

Graduate students are expected to start research in their first year and will receive individual attention and guidance. The objective is to produce graduates with a broad training in genetics, who are able to conduct independent research programs that are creative and productive. The curriculum is broad, including plant, animal, physiological, molecular, microbial, fungal, yeast, population, quantitative and behavioral genetics, as well as cytogenetics, genetic engineering, and biotechnology in general. Students are expected to specialize in one of four areas of genetics for their advanced study: Molecular Cellular and Developmental Genetics; Genetics of Plant-Microbe Interactions; Arthropod Genetics; or Quantitative Genetics.

Original research is a requirement for study in the Genetics Graduate Program. The small size of the research labs, typically three to six students per lab, makes for close interaction within the group. Students are also encouraged to interact with other faculty and students in the program and in the member departments.

Admission

Incoming students generally have degrees in some area of biology. However, the overwhelming considerations are an intensive interest in genetics, and minimum prerequisites for admission into our programs. Application procedures require:

1. A completed application form
2. A statement of professional goals and objectives
3. Transcripts from all colleges and universities attended
4. Three letters of recommendation

Additional Graduate School regulations apply to applicants from outside of the United States. Foreign students are expected to have a TOEFL score of 600 or better; the GRE is desired but not required. Outof- state tuition is waived for students who are awarded graduate research or teaching assistantships.

Students who consider pursuing graduate careers at Kansas State University are encouraged to visit the university in order to meet with members of faculty and with other students and to form their own impression of the general atmosphere and of the many research possibilities. If that is not possible, students are encouraged to browse the research programs of specific Genetics Faculty (<http://www.ksre.ksu.edu/genetics/>). Research programs that interest prospective students should be listed when applying for admission to the program.

Leadership Communication

Kerry Priest, Director

207 Leadership Studies

785-532-6085

kerryp@ksu.edu

<http://www.k-state.edu/lead-comm/>

Leadership Communication is an interdisciplinary graduate program that is managed with these units: Communications and Agricultural Education Department, Communication Studies, and the Mary Lynn and Warren Staley School of Leadership.

Program Overview

The Leadership Communication doctoral program is an interdisciplinary research degree grounded in community-engaged scholarship. This degree is rooted in the theories and methods of leadership, communication, and other areas of inquiry related to collaborative change. Through the study and practice of leading change, students will produce original research that contributes to making progress on the most difficult challenges of our times.

Admissions

Our students bring a variety of academic backgrounds, professional experience, and civic interests to this program. Strong candidates for this doctoral program are committed to:

- Engaging with others to leverage diverse perspectives
- Developing capacities to conduct original research, convene stakeholders, and facilitate change processes
- Enhancing careers with foundations, NGOs, corporations, educational institutions, and governmental agencies

Application procedures require:

1. A completed application form
2. Transcripts from all colleges and universities attended
3. Three letters of recommendation
4. Two writing samples

Additional Graduate School regulations apply to applicants from outside of the United States.

Public Health

Ellyn Mulcahy, Director of graduate studies

103 Trotter Hall
785-532-2042
mphealth@ksu.edu
<http://www.k-state.edu/mphealth/>

About the program

Public health is an interdepartmental graduate professional program with faculty participants from many academic departments of the university. The 42 semester hour program is designed to provide graduate-level education for individuals currently employed or anticipating a career in the field of public health. The purpose of public health is to address the physical, mental, social and environmental concerns of communities and populations. Its focus is on prevention of injury and disease in populations while they are still healthy, rather than treating individual patients after they become sick. The field of public health involves programs, strategies, and interventions designed to protect and improve community health through health education, promotion, research, and disease prevention. The final outcome of all public health efforts is to improve the quality of life in communities as well as targeted populations. The MPH program includes the five core areas within the field of public health: environmental health, behavioral sciences/health education, epidemiology, biostatistics, and health services administration. In addition to the five core areas, a student can select an area of emphasis in food safety and biosecurity, infectious diseases/zoonoses, public health nutrition, or public health physical activity.

Application and admission requirements

The Kansas State University Graduate School oversees admissions for the Master of Public Health (MPH) degree and the Graduate Certificate in Public Health Core Concepts. To be eligible for admission to a graduate program, an applicant must have completed an undergraduate degree. Prospective students may apply for the degree and/or the certificate by following the application procedures under each heading.

- Application procedures for MPH Degree
- Application procedures for Graduate Certificate in Public Health Core Concepts

K-State Research and Extension

J. Ernie Minton, Director, K-State Research and Extension and Dean College of Agriculture
Martin Draper, Associate Dean for Research and Graduate Programs
Gregg Hadley, Associate Director for Extension

113 Waters Hall
785-532-6147
www.ksre.k-state.edu

K-State Research and Extension is dedicated to a safe, sustainable, and competitive food and fiber system and to strong, healthy communities, families, and youth through integrated research, analysis, and education.

K-State Research and Extension provides practical, research-based information and educational programs to address critical issues facing individuals, families, agricultural producers, business operators, and communities.

K-State Research and Extension is organized into the following core mission themes; agricultural industry competitiveness; food, nutrition, health, and safety; natural resources and environmental management; youth, family and community development.

One K-State Research and Extension partner, the Kansas Agricultural Experiment Station (KAES), conducts original research both on and off campus. Twenty-four departments in five colleges are involved. K-State Research and Extension is also strongly allied with the Graduate School in training graduate students; interested graduate students are encouraged to seek research assistantships. Many undergraduate students work for K-State Research and Extension, which greatly adds to the classroom experience. Off-campus research is centered at two research-extension centers, two research centers, and 10 experiment fields in various parts of the state.

The other K-State Research and Extension partner, the Cooperative Extension Service, provides an important learning bridge between the university and the people of the state. It applies scientific knowledge, principles, and practices to the grassroots problems of Kansans. At the same time, this unique information delivery system brings back requests for new knowledge to the research staff at the university.

The Cooperative Extension Service staffs four area offices (two operate as part of a Research/Extension Center) and helps maintain local extension offices, staffed by off-campus K-State faculty members, in all 105 Kansas counties.

Extension agents are responsible for conducting educational programs in the core mission themes. The agents serve as a local source of information regarding programs of many states and federal agencies, and then help people apply this information to their specific situation.

Information is published in scientific journals; in station bulletins, extension bulletins, national and international conferences; and in popular journals and news releases to the press and radio and television stations. Requests for station publications should be sent to the Distribution Center, Umberger Hall.

Agricultural Experiment Station

Western Kansas Agricultural Research

Centers: Colby-Garden City-Hays

Robert L. Gillen, Head and Professor

Agricultural Research Center-Hays

Professors: Martin, Seifers, and Stahlman

Associate Professors: Harmony and Kofoed

Assistant Professors: Jaeger and Michaud

Investigations are primarily related to plant and animal systems specific to western Kansas, where rainfall is limited. They include beef grazing, feeding, and breeding studies; crop improvement, with special emphasis on wheat and sorghum; soil management; weed control; plant disease; and insect management.

Northwest Research-Extension Center-Colby

Professor: Lamm; **Associate Professor:** Aiken

Major areas of research are crop improvement; soil management; irrigation; weed control; and horticulture.

Southwest Research-Extension Center-Garden City and Tribune

Professors: Klocke and Schlegel

Associate Professors: Buschman and Currie

Current investigations involve irrigation research; dryland soil and crop management; crop improvement; weed control; insect and other pest control in crops; soil management; and environmental management for livestock operations.

Southeast Research-Extension Center

J.D. McNutt, Head

Professors: Moyer and Sweeney; **Associate Professor:** Kelley; **Assistant Professor:** Long

Research focuses on soil and water conservation; crop improvement; weed control; beef cattle grazing investigations; and forages.

Experiment fields

The Kansas Agricultural Experiment Station includes 11 experiment fields: North Central Kansas (Belleville), Irrigation (Scandia), Sandyland (St. John), South Central Kansas (Hutchinson), Harvey County (Hesston), East Center (Ottawa), and Kansas River Valley Irrigation (Rossville and Silver Lake).

Experimental work is devoted to horticultural and forest crops at three fields: John Pair Horticultural Research Center (Wichita), Pecan Experiment Field (Chetopa), and East Central Horticulture Field (Olathe).

Affiliated agencies

Kansas Water Resources Research Institute

Cooperating with the Water Resources Institute, University of Kansas

The Kansas Water Resources Research Institute conducts basic and applied research on water use and to train scientists in water resources. Representatives of K-State and the University of Kansas participate in institute policy making and research. Research is focused on finding the most effective ways of conserving, using, and distributing available water.

Food Science Institute

Jeanette Thurston, Director

The Food Science Institute facilitates training of undergraduate and graduate students; basic and applied research initiatives; and technical and scientific information transfer to academia consumers, food industry, and governmental agencies. More than 40 faculty are members of the food science graduate faculty. Faculty are located in the Departments of Agronomy; Animal Sciences

and Industry; Biochemistry; Chemical Engineering; Communications; Diagnostic Medicine/ Pathobiology; Entomology; Grain Science and Industry; Hotel, Restaurant, Institution Management and Dietetics; Human Nutrition; and Journalism and Mass Communications.

Center for Applied Statistics

George A. Milliken, Director

The Center for Applied Statistics provides consulting services for scientists associated with the Agricultural Experiment Station.

Kansas Center for Agricultural Resources and the Environment

Dan Devlin, Director

The Kansas Center for Agricultural Resources and the Environment (KCARE) is an interdisciplinary research and education unit of K-State Research and Extension whose purpose is to provide focus on environmental issues related to agriculture. The center works with faculty from academic departments to provide coordination and support for research and educational activities in natural resources and environmental management. The center also works to garner financial support for programs and serves as a single point of contact for agencies and organizations outside K-State who have interest in natural resource and environmental issues.

Kansas Center for Sustainable Agriculture and Alternative Crops

KCSAAC is an interdisciplinary center that supports family farms in Kansas through research, education, and outreach programs focusing on production, storage, processing, and marketing technologies that boost small farm profitability, protect natural resources, and enhance rural communities. Examples of activities include evaluating production and marketing of new crops for Kansas, providing educational programs on value-added processing and niche marketing, and providing educational programs on whole farm planning and environmental assessment. KCSAAC was created by the 2000 Kansas Legislature out of concern for the survival of family farms.

Plant Biotechnology Center

John Leslie, Director

The Plant Biotechnology Center links scientists in several colleges and departments who use molecular biology and cell and tissue culture to modify the plant genome. The center's mission is to use biotechnology to add quality and value to Kansas products.

The major emphasis is to develop systems, approaches, linkages, and a knowledge base to apply biotechnology to plant improvement. The goals are to enhance yield and product quality for traditional uses and to explore value-added uses for novel markets.

Projects include activities that are immediately important to Kansas agriculture and that have a high probability of success in a relatively short period of time. They also include a component of basic research that will reach application at a later time. An important consideration is work on Kansas plants and plant products that could be designed to better meet the demands of national and international markets.

Extension Agriculture and Natural Resources

Faculty in the Colleges of Agriculture and Engineering conduct educational programs and provide technical assistance through the county extension network to citizens throughout the state.

Interdisciplinary educational programs are conducted in water quality; natural resource use and conservation; community and economic development; value-added processing and production; food, feed, forage; animal production and utilization; and farm business and financial management.

Agricultural Economics

David Lambert, Head
Glynn Tonsor, State Leader

Farm management

The extension educational program in farm management is divided into two areas: Kansas Farm Management Association programs and area and state farm management programs.

In the Kansas Farm Management Association program, the 23 farm management agricultural economists conduct an intensive educational program with approximately 3,000 Kansas farm families in the six farm management associations.

The extension farm management program is conducted by state specialists and area economists. It is done with in-depth educational programs in cooperation with the county extension agents. The area specialists conduct in-depth workshops in farm business management with farm families, provide a nearby reference resource for agents, and develop educational materials for agent use.

Agricultural policy

The public affairs extension educational program provides educational information on policy issues of current interest. Problems are analyzed, alternatives and consequences examined, and the people are challenged to reach decisions.

The economic information program provides current data on factors affecting farming, business and industrial operations, labor supply and demand, and family living costs.

Extension marketing

The main projects of marketing include marketing information, agribusiness, and commodity marketing activities. News releases, monthly teleconferences, publications directed to the general public, and special information directed toward specific agricultural audiences are used to disseminate information.

Extension economic development

Extension economic development assists communities and businesses in development efforts. News releases, publications, and seminars are offered.

Extension local government

The extension local government programs provide direct educational assistance in the areas of structure, management, finance, and policy. The Office of Local Government serves as the primary unit providing outreach programming in this area.

Extension Agronomy

William Schapaugh, Interim Head

Extension agronomy conducts a statewide educational program in agricultural crop production and natural resource conservation. The program is focused on conservation and protection of natural resources through education and technology transfer that results in improved, stable crop production efficiency. The breadth of the program is in understanding the dynamics of crops, weeds, soils, and water on crop and grazing lands, management, and production.

Extension Animal Sciences and Industry

Michael Day, Head
Joel DeRouchey, State Leader

Extension specialists in animal sciences and industry provide leadership for state programs in beef cattle, dairy cattle, horses, poultry, sheep, swine, meats, dairy products, value-added food products, food safety, and wildlife damage control.

Extension Biological and Agricultural Engineering

Joseph P. Harner, Department Head and State Leader

Professors: Harner, Murphy, and Rogers; **Associate Professor:** Taylor; **Assistant Professor:** Wolf; **Emeriti Professor:** Clark, Jepsen, Koelliker, Powell, and Wendling.

Extension agricultural engineering conducts an educational program which relates to engineering principles to agricultural concerns including water management, water quality, waste management, crop and grain management systems, food processing, ag safety, pesticide application equipment, and livestock production facilities.

Community Vitality

Associate Specialist: Menon, Steen, Daniels, Rice; **Emeritus Associate Specialist:** McAdoo.

The Kansas PRIDE Community Improvement Program is a cooperative effort between government, education, and private industry to develop an organizational and leadership structure for community-wide volunteer action. The Kansas PRIDE program is jointly administered by the Kansas State University Cooperative Extension Service and the Kansas Department of Commerce and Housing.

Extension Entomology

Brian McCormack, Interim Head

Extension entomology is concerned with integrated insect and mite management or control for Kansas citizens. Pilot pest management projects are used to introduce and validate integrated approaches to managing pest populations.

Extension Grain Science and Industry

Gordon Smith, Head

Educational efforts target all sectors of the grain industry and include people involved with wheat breeding, production, grain handling, merchandising, processing, baking, feed manufacturing, and regulatory compliance. Two thrusts of this program include grain utilization and processing quality; and flour mill, feed mill, and grain elevator management. Subjects include wheat quality as it relates to milling and baking properties, commercial and on-farm grain storage and quality maintenance techniques, on-farm feed manufacturing, commercial feed processing, grain industry safety and regulatory compliance, plant sanitation, food safety, and grain grading.

Extension Horticulture, Forestry, and Recreation Resources

Steven Keeley, Interim Head

Jason Griffin, State Leader

Programs in extension horticulture and landscaping serve persons interested in fruits, nuts, vegetables, flowers, turf, shrubs, ornamental and shade trees, and forest and riparian management.

Extension Plant Pathology

Meghan Kennelly, Interim Head

Douglas J. Jardine, State Leader

Plant pathology extension specialists provide information about the occurrence and nature of plant diseases and the economic means for their control.

Youth, Family, and Community Development

Community Development

VACANT, Extension PRIDE Program Coordinator

Associate Specialists: Rice; **Emeritus Professor:** Frazier; **Emeritus Associate Specialist:** McAdoo.

An educated and knowledgeable citizenry is the foundation of our state's economic productivity, democratic charter and social system.

K-State programs inform and help people through research and extension build strong, healthy communities.

4-H Youth Development

Professor: Weber; **Associate Professor:** Potter, Jepsen, Sea, Van Horn; **Associate Specialist:** Wiebers; **Extension Associate:** Hecht; **Emeriti: Professors:** Apel, Bates, Busset, Eyestone, and Redman; **Emeriti Associate Professors:** Borst and Salmon.

The 4-H youth development program is a community of young people across Kansas who are learning leadership, citizenship and life skills. Utilizing a variety of delivery methods and trained volunteers, young people ages 7-19 are involved in hands-on learning experiences. Program priorities include science and technology, healthy lifestyles, and youth citizenship.

Family and Consumer Sciences

Family Studies and Human Services

Sonya Lutter, Head

Assistant Professor: Johannes; **Emeritus Professor:** Bradshaw.

Extension programs address a wide range of issues that help strengthen families and youth across Kansas. Programs teach families about financial planning, parenting, family communication, health, and aging issues.

Food, Nutrition, Dietetics, and Health

Mark Haub, Head

Tanda Kidd, Extension State Leader

Professor: Medeiros; **Associate Professor:** Higgins; and **Assistant Professor:** Kidd.

Healthy eating and physical activity education across the lifespan is available through local extension offices in Kansas. Human nutrition faculty lead programming for nutrition for pregnancy, infants, children and youth, adults, and seniors. All of these include programming for limited resource families and individuals.

Services and Facilities

Communications

Jason Ellis, Head

In addition to its teaching and research program, the Department of Communications provides comprehensive communications and computer-based technology support and consultation for all offices, departments, and centers in K-State Research and Extension and the College of Agriculture.

Our faculty have professional experience in editing and producing publications, creating graphic design, writing news releases, producing radio and television news and features, managing information systems, training to enhance communication and technology software skills, and duplicating and distributing educational materials.

Extension Field Operations

James L. Lindquist, Associate Director

Professor Emeriti: Cox and Van Meter; **Associate Professor Emeriti:** Albright and McReynolds.

The Extension Field Operations office provides leadership as a resource and support to the area director team. It provides leadership for organizational guidelines, policy and centralized functions in support of out-state local operations, and professional development of effective boards and councils.

Northeast Regional Office

Chris Onstad, Regional

Professor: Duncan; **Instructors:** Andres, Boyer, Flaming-Jackson, Graber, and Mack; **Instructor Emeriti:** Christian and Domsch.

Northwest Research-Extension Center

Aliesa Woods, Regional Director

Associate Professors: Barker, Johnson, O'Brien, and Olson; **Instructors:** Falk; **Assistant Professor Emeriti:** Mikesell and Overley; **Director Emeritus:** White.

Southeast Research-Extension Center

J. D. McNutt, Director

Professor: Price; **Instructor:** Hinshaw; **Assistant Professor:** Shoup; **Professor Emeriti:** Brazle, Kilgore, Lippert, Robbins, and Westmeyer; **Associate Professor Emeritus:** Appleby; **Instructor Emeriti:** George and Stephens.

Southwest Research-Extension Center

Mary Sullivan, Director

Professor: Sloderbeck; **Assistant Professors:** Martin and Waggoner; **Instructors:** Dumler and Sollock; **Professor Emeriti:** Mann, Hartman, and Young; **Instructor Emeriti:** Frisbie.

Local Extension Offices

There are extension offices in each of the 105 counties.

Research Facilities and Centers

Special Research Guidelines

James Guikema, Associate Vice President for Research
Office of Research and Sponsored Programs
102 Fairchild Hall
785-532-6195
785-532-2983 Fax
E-mail: research@k-state.edu
www.ksu.edu/research

Special research guidelines are in place for scholarly activities that fall into a variety of categories. These include work involving human subjects, which must be reviewed by a human safety oversight committee, and research involving animals, which must be reviewed by the Institutional Animal Care and Use Committee. Research that is focused on infectious diseases and hazardous chemicals, or which uses recombinant DNA technology, must be reviewed by a biosafety oversight committee. Research involving artifacts that may be of Native American origin are subject to special federal guidelines. Guidelines for all of these activities, and suggestions regarding the appropriate oversight committees, are found in the Office of Research Compliance.

The purpose of a university is to develop and transmit knowledge. Consistent with this purpose, Kansas State University is committed to making ideas and research results available to all who might wish to use them. Therefore, by University policy, classified research may not be carried out under University auspices by any faculty member, staff, or student. Classified research is broadly defined as research in which the purpose, the investigators, the research procedures, or the results are kept secret for an indefinite period of time, and with the control of their release or publication resting in an agency other than the University.

Below is a partial list of research facilities and centers at Kansas State University. For a more complete listing contact Research and Sponsored Programs at 785-532-6195 or website www.ksu.edu/research.

Advanced Manufacturing Institute

510 McCall Road
Manhattan, KS 66502-5034
785-532-7044
785-532-7031 Fax
E-mail: ami@ksu.edu
www.amiksu.org

The Advanced Manufacturing Institute contributes to the economic development in Kansas by helping manufacturers become familiar with and adopt advanced technologies. Through research, technology transfer, and technical assistance AMI helps small and medium-sized manufacturing companies become more competitive nationally and internationally. AMI's interdisciplinary research teams consisting of faculty from various university departments develop technologies vital to manufacturing enterprises.

Clients working with AMI benefit by taking advantage of AMI's professional staff and facilities as well as Kansas State University's faculty expertise and resources to assist them in their manufacturing research and development activities. AMI is a KTEC-funded Center of Excellence. AMI also presents seminars and workshops focusing on advanced technology.

AMI is now a Certified Education Center for the Fabricators & Manufacturers Association, International (FMA). This alliance provides work force training to the metal forming and fabricating industry.

As a Certified Education Center, AMI and FMA can offer industry partners: Customized training programs, training and technical conferences, greater access to advanced technology, programs with equipment demonstrations and hands-on activities, an organized network of renowned experts, expanded offering of FMA benefits and services.

Beach Museum of Art

Lorne E. Render, Director

Marianna Kistler Beach Museum of Art

701 Beach Lane

Manhattan, KS 66506

785-532-7718

785-532-7498 Fax

E-mail: beachart@ksu.edu

<http://www.k-state.edu/bma/>

The Marianna Kistler Beach Museum of Art opened in October 1996. The 26,000 square-foot, award-winning building was designed by Moore/Andersson Architects of Austin, Texas. It was built with private funds, led by the gift of Ross and Marianna Beach of Hays, Kansas. It houses K-State's art collection, which was established in 1928 by Professor John Helm with the purchase of two large oil paintings by the Kansas artist Birger Sandzen. Since that time, the collection has grown to include approximately 4,300 works of art. From the collection's inception, the focus has been on 20th century American art, with a special emphasis on the works of Kansas and regional artists and the works of American printmakers. These features of the collection promise to make the Museum the premier center for the study and appreciation of regional painting and printmaking. Special collections includes works by John Steuart Curry, the photographs of Gordon Parks, the Konza Prairie works of Patricia DuBose Duncan, and prints issued by the Associated American Artists print club.

The 9,000 square-foot gallery area of the Museum features five exhibition spaces for displaying the permanent collection and traveling exhibitions. The Crosby Kemper Educational center houses the 120-seat UMB Theatre and the LouAnn McKinnon Dunn Activity Center. A variety of educational programming is available to the University, public schools, and Manhattan community. The Theatre may be used for lectures, films, seminars and receptions. The Activity Room has been designed for art workshops, family activities, artist demonstrations and small group meetings. A Works Examination Studio allows scholars and visitors to view works of art not on exhibition. Additional resources include artists files, catalogue files, photographic files of the collection, and a lending resource library for teachers. Visit the Museum's web page at www.ksu.edu/bma for more information and to view archived exhibitions.

Museum Hours Tuesday - Friday, 10 a.m.-5:00 p.m.

Saturday - Sunday, 1 p.m.-5:00 p.m.

Closed on Mondays and Holidays

Open on selected Thursdays for public programs.

Phone: (785) 532-7718

Admission is free.

Complimentary parking adjacent to the Museum.

Biology Research Microscopy and Image Processing Facility

Kansas State University Microscopy Facility

Dan Boyle, Director

Division of Biology

6 Ackert Hall

785-532-0134

785-532-6653 Fax

E-mail: dboyle@ksu.edu

The Biology Microscopy and Image Processing Facility, located in the basement of Ackert Hall, is a fee-for-service facility available to Kansas State University faculty, staff and students, and individuals from state and outside institutions. This modern facility is fully equipped to meet your research microscopy and imaging needs. Individual or small group training and familiarization with equipment and techniques used by electron and confocal microscopist are provided by this facility. Clients can be trained to use equipment at this facility by themselves or request assistance from facility staff members.

Biosecurity Research Institute (BRI)

Dr. Ron Trewyn, Vice President for Research
Dr. Beth Montelone, Interim Research Program Director
Scott Rusk, Director Pat Roberts Hall
1041 Pat Roberts Hall
785-532-1333
www.bri-k-state.edu/

The Biosecurity Research Institute located in Pat Roberts Hall provides unique biocontainment space for research on food crop, food animal and food safety diseases. Active research will address agriculture and public health issues. In addition to the research missions, Pat Roberts Hall also houses training and education space that provides for hands-on laboratory biosafety training and biocontainment operations training, as well as, educational programs for scientific information exchange and conference capabilities.

Center for BioServe Space Technologies

230 Ackert Hall
785-532-6705
Fax: 785-532-6707
E-mail: bioserv@k-state.edu
<http://www.colorado.edu/engineering/BioServe/>

The Division of Biology, in cooperation with Aerospace Engineering Sciences at the University of Colorado, has been selected by the National Aeronautics and Space Administration to lead BioServe Space Technologies, a NASA Center for the Commercial Development of Space. The division activities are focused on the life science application of the center, which adds a vast new dimension to the scientific education of future generations of students. This space training and research program gives biologists, students training in the animal and plant sciences, engineers and others an awareness of opportunities in space sciences that will intellectually involve them in space missions of the future. Initial research projects are directed towards an understanding of many biological processes in microgravity. Projects also are focused on the application of the space environment in areas of significant market value, such as biotechnology and bioengineered pharmaceuticals, synthetic organ products and high efficiency agriproducts and agrigenetic materials. Faculty scientists and students participating in BioServe Space Technologies have an opportunity to conduct important research by NASA's reduced gravity program on the KC-135 aircraft, as well as on sounding rockets and space shuttles.

Biotechnology Core Facility

Dr. John M. Tomich, Director
Burt Hall, Rooms 201, 207, 211, and 216
785-532-5956
Fax: 785-532-6297
E-mail: jtomich@k-state.edu
<http://www.k-state.edu/bchem/biotech/>

The Biotechnology Core Laboratory was established to provide a number of centralized services to researchers at KSU and elsewhere. Significant university support from the deans of the College of Agriculture and the Graduate School has enabled us to offer a number of services at very competitive rates. Our services include: DNA/RNA oligonucleotide synthesis, peptide/protein synthesis, amino acid analysis, peptide/protein sequencing, peptide mapping, and MALDI-TOF mass spectrometry.

Center for Basic Cancer Research

Terry C. Johnson Center for Basic Cancer Research
Dr. Rob Denell, Director
1 Chalmers Hall
785-532-6705

Fax: 785-532-6707
E-mail: rdenell@ksu.edu
www.ksu.edu/cancer.center

The Center for Basic Cancer Research sponsors numerous educational and research programs related to cancer studies at KSU. The center developed a cancer research award program designed specifically for undergraduate students. Funded entirely by private and corporate gifts, these research awards are given to deserving undergraduate students on a competitive basis. An integral part of the cancer center is the Anti-Cancer Drug Laboratory where studies are conducted on the cellular and molecular events associated with tumor promoters which, unfortunately, enhance cancer growth. Support is provided for graduate student and faculty travel, summer stipends, laboratory equipment and supplies. These programs are interdisciplinary in nature and include faculty scientists in biology, biochemistry, chemistry, psychology, laboratory medicine, pathobiology, family services, foods and nutrition, and plant pathology. The unique administrative structure and the quality of the faculty scientists have made this multidisciplinary program both powerful and successful.

Center for Gravitational Studies in Cellular and Developmental Biology

^
TO

E-mail: nasaepscor@ksu.edu
<http://www.k-state.edu/epscor/>

The Division of Biology is the home of the Center for Gravitational Studies in Cellular and Developmental Biology. This center has been funded as a NASA Specialized Center for Research and Training in Gravitational Biology, as the Gravity as a Determinant in Cellular and Developmental Biology NASA-EPSCoR Program, and by individual NASA grants to Center investigators. Research in this center is focused on the potential role of gravity on cell and developmental biology of both plant and animal systems. Investigations are based both on basic sciences and applications for long-term space travel. This center has a major emphasis on graduate and post-graduate training, offering a unique opportunity for student preparation in space life sciences.

COBRE in Epithelial Function in Health and Disease

Dr. Daniel C. Marcus, Program Director
124 Coles Hall
785-532-4864
Fax: 785-532-4557
E-mail: marcus@ksu.edu
www.vet.ksu.edu/depts/ap/COBRE/

The College of Veterinary Medicine (CVM) at Kansas State University hosts the COBRE for epithelial function. This multi-year National Institute of Health (NIH) award provides the resources needed to enhance the epithelial research programs of junior basic scientists and clinician scientists at Kansas institutions. The ultimate goal of the COBRE is to assist the junior investigators in their development, and to help them become NIH-funded investigators as rapidly as possible. The COBRE includes seven teams of junior investigators and mentors in the KSU CVM, along with collaborating departments at KSU and the University of Kansas Medical Center. As junior investigators graduate from the program and are successful at obtaining NIH funding, other junior investigator/mentor teams will be actively sought and brought into the COBRE. COBRE programs center on epithelial cell physiology or pathophysiology and provide a strong foundation for translational research. To ensure programmatic success, three core facilities are being established for the center: 1) a state-of-the-art confocal microscope facility; 2) a gene array analysis station; and 3) an epithelial electrophysiology facility.

Dow Multicultural Resource Center

Rhondalyn Peairs, Director
Hale Library, Room 302
785-532-7430

E-mail: downmrc@gw.ksu.edu
<http://www.lib.ksu.edu/depts/downmrc/index.html>

The Dow Chemical Multicultural Resource Center (DOWMRC) provides research and instructional services in support of K-State's American ethnic studies program. Research emphasis is placed on the following ethnic groups: African Americans, Hispanic Americans, Native Americans, and Asian Americans.

DOWMRC features a reference collection of encyclopedias, dictionaries, and indexes related to various American ethnic groups; magazines and periodicals; and multicultural and international newspapers. Visitors can view displays showcasing the University's unique multicultural activities and programs.

Electronics Design Laboratory

Tim, J. Sobering, Director
124 Burt Hall
785-532-7826
Fax: 785-532-2092
E-mail: edl@ksu.edu
www.ksu.edu/ksuedl

The Electronics Design Laboratory (EDL) provides full-time engineering support, electronics design and software development for research and teaching at Kansas State University through the design and manufacture of advanced instrumentation, data acquisition systems, sensors, and other high-end electronics. Established in 1996, EDL eases researchers' access to advanced electronics, assists with integrating electronics technology into research and teaching programs, and aids in electronics technology transfer to users by providing ongoing technical support. EDL works in cooperation with many diverse academic departments, allowing a symbiotic approach to problem solving.

By delegating technical electronics issues to EDL, investigators free themselves to focus more fully on core research objectives.

EDL is headed by an experienced electrical engineer, who supervises a full-time technical staff and a number of graduate and undergraduate interns. More information on EDL capabilities and services can be obtained at our web site.

Food Safety and Security

216 Call Hall
785-532-1234
Fax: 785-532-5861
E-mail: fss@k-state.edu
<http://fss.k-state.edu>

The U.S. and international food system is so complex that any effort to understand its multiple dimensions must draw on multiple academic disciplines. By integrating insights from multiple disciplines, researchers can better describe problems and prescribe solutions in this system. K-State's Food Safety and Security program pursues excellence in such interdisciplinary scholarship. By highlighting research from the fields of microbiology, sociology, economics, et cetera--indeed, the list does and should go on--universities can paint truer pictures of today's food safety and food security problems and solutions. In 2001, K-State formed the Food Science Institute to facilitate initiatives across five colleges and 11 departments. Food Safety and Security is one of the major program areas of the Food Science Institute. Owing to the Institute's unique interdepartmental and interdisciplinary mission, the Food Safety and Security program has thrived in this environment.

Food Science Institute

Dr. Curtis Kastner, Director
216 Call Hall
785-532-4057
Fax: 785-532-5861
E-mail: foodsci@ksu.edu

www.foodsci.k-state.edu

The Food Science Institute (FSI) was established in 2001 to integrate the wide range of expertise in Food Science at K-State. Approximately 40 faculty in more than a dozen disciplines are collectively involved in facilitating undergraduate and graduate academic programs and providing research and technical assistance for the food industries.

State-of-the-art laboratories and pilot plants are available to fulfill research, teaching, and extension missions that address food-related issues. Facilities include bakery, milling, dairy, meat, poultry, egg, thermal, extrusion, fermentation, sensory analysis, and value-added processing/evaluation capabilities. Interaction with other existing institutes, centers, and programs expands the base of expertise needed to address food-related issues.

Frontier Program

Dr. Justin Kastner, Assistant Professor, Food Safety and Security
Co-Coordinator of Frontier
Department of Diagnostic Medicine/Pathobiology
310 Coles Hall
785-532-4820
Fax: 785-532-4851
E-mail: jkastner@k-state.edu
www.frontier.k-state.edu

Frontier is an interdisciplinary program for the historical studies of border security, food security, and trade policy, which Dr. Justin Kastner coordinates in partnership with Dr. Jason Ackleson of New Mexico State University. Frontier undergraduate and graduate students blend academic perspectives from history, food security and trade policy, and international relations to study border and trade issues arising at the frontier.

Geographic Information Systems Spatial Analysis Laboratory (GISSAL)

Shawn Hutchinson, Director
164A Seaton Hall
785-532-5685
Fax: 785-532-7310
E-mail: gissal@ksu.edu
<http://www.k-state.edu/geography/research/gissal.htm>

The Geographic Information System Spatial Analysis Laboratory (GISSAL) at Kansas State University is a multidisciplinary center supporting spatial research, education, and outreach activities at Kansas State University. Established in August 1990 and recognized as a National Center of Digitizing Excellence by the USDA Natural Resource Conservation Service, GISSAL combines faculty expertise and trained graduate and undergraduate student technicians with advanced geospatial technology and sophisticated spatial analysis capabilities.

GISSAL offers a modern computing infrastructure, access to state-of-the-art data visualization tools, and the most powerful GIS, satellite remote sensing, CAD, digital mapping, database, and statistical analysis software packages. Contract services include GIS database design and construction, digital cartographic support and production (including web-servable interactive maps), and customized GIS workshops and software training.

Hazardous Substance Research, Center for

Dr. Larry E. Erickson, Center Director
104 Ward Hall
785-532-6519
Fax: 785-532-5985

E-mail: chsr@k-state.edu
www.engg.ksu.edu/HSRC

Kansas State University leads the consortium comprising the Great Plains/Rocky Mountain Hazardous Substance Research Center which serves Environmental Protection Agency (EPA) Regions 7 and 8. Other member universities are Colorado State, Haskell Indian Nations, Lincoln, Montana State, South Dakota State, and Utah State Universities, along with the Universities of Iowa, Missouri, Montana, Nebraska, Northern Iowa, Utah, and Wyoming. The center was established in 1989 to conduct research pertaining to identification, treatment, and reduction of hazardous substances resulting from agriculture, forestry, mining, mineral processing, and other activities of local interest. In 1994, efforts of principal investigators were broadened to include programs for minority academic institutions, technical outreach services for communities, and research and re-education for displaced military and Department of Defense personnel.

The center has undertaken research in the following areas: studies of soil and water contamination by heavy metals and mining wastes; research on soil and groundwater contamination from a variety of sources; development of biodegradation and immobilization technology; development of simplified and inexpensive methods for analyzing contaminated soil; hazardous waste minimization; and determination of safe concentration levels of hazardous substances in soil and water.

Diversity of interests in EPA Regions 7 and 8 and the large geographic area represented are further reflected in the training and technology transfer program the center currently supports. Issues of the center newsletter HazTech Transfer have been widely disseminated across the nation; an information clearinghouse at Kansas State University Hale Library has been established and contains over 1,000 publications, including center-funded theses, dissertations, reports, and videos; the center has held annual conferences on hazardous waste research since 1986 with more than 70 papers presented at each conference; and general public environmental information activities are ongoing. Many center publications, including proceedings of the 1995-1999 conferences, are now available on our web site at <http://www.engg.ksu.edu/HSRC>.

Huck Boyd National Center for Community Media

Gloria Freeland, Director
105 Kedzie Hall
785-532-0721
Fax: 785-532-5484
E-mail: huckboyd@ksu.edu
huckboyd.jmc.ksu.edu

The Huck Boyd National Center for Community Media was founded in 1990 to serve and strengthen the local newspapers, radio stations, cable systems, and other media that play a key role in the survival and revitalization of America's small towns. The center's mission is to assist in sustaining and enhancing the positive qualities of life characteristic of small communities in America through strengthening community media.

Kansas Center for Agricultural Resources and the Environment (KCARE)

Bill Hargrove, Director
15 Waters Hall
785-532-6147
Fax: 785-532-6563
E-mail: kcare@ksu.edu
www.oznet.ksu.edu/kcare

KCARE provides research and educational programs that help Kansans balance "utilization" and "protection" of natural resources today and into the future. The health and prosperity of future generations depends on a mutually beneficial relationship between agriculture, natural resources, the environment and consumers. The Kansas Center for Agricultural Resources and the Environment was established to coordinate and enhance research, extension, and teaching activities pertaining to environmental issues related to agriculture.

KCARE's roles are to foster interdisciplinary team approaches to solve environmental problems related to agriculture; serve as a liaison for state and federal agencies, non-government organizations and private groups outside K-State; communicate the relationship of agriculture and the environment to producers and the public; and develop financial resources for interdisciplinary research, extension and communications activities at the Center.

Center for Engagement and Community Development

Dr. David E. Procter, Director
202 Ahearn
785-532-6868
Fax: 785-532-6808
E-mail: cecd@k-stat.edu
www.k-state.edu/cecd/

The Center for Engagement and Community Development (CEDC) will extend and expand K-State's historic mission of engagement and outreach. CEDC is a place where university faculty and community leaders can come together to address community challenges, meet community needs, and realize community dreams through effective scholarship-based engagement. In this process, we plan to help make Kansas State University one of the truly premiere land-grant universities.

Kansas Center for Sustainable Agriculture and Alternative Crops (KCSAAC)

Jana Beckman, Coordinator
Kansas Center for Sustainable Agriculture and Alternative Crops
c/o HFRR
3029 Throckmorton
785-532-1440
Fax: 785-532-5780
E-mail: kcsaac@oznet.ksu.edu
www.oznet.ksu.edu/kcsaac

KCSAAC was created in 2000 by the Kansas Legislature to facilitate research, education, and outreach related to sustainable agriculture. The future of agriculture must balance agricultural production, use of natural resources, profitability, the environment and the needs of consumers.

KCSAAC's role is to work with university faculty, government agencies and other agricultural groups to educate family farmers on environmental stewardship, boosting family farm profitability, building community support for agriculture, and enhancing rural communities.

Educational Communication Center

Doug VonFeldt, Interim Director
128 Dole Hall
785-532-7041
Fax: 785-532-7355
E-mail: ecc@ksu.edu
www.ksu.edu/ecc

The Educational Communications Center (ECC) in Dole Hall was established in 1986, the facilities and equipment were made possible through a grant from the U.S. Department of Education. The mission and purpose of the ECC is to develop and enrich human resources within the state by providing access for residents of Kansas, the nation and the world to educational opportunity at all levels through the appropriate utilization of technology.

Dole Hall, is a 32,000 square foot production and distribution facility with three production studios, control rooms and satellite uplink, educational development laboratory, editing suites, multimedia lab, graphic design studio, offices, conference rooms and

a Channel 49 ABC News Bureau. A large garage houses a mobile satellite uplink unit and a video production truck to provide services from any location. Other tenants in Dole Hall include offices and student facilities for the A.Q. Miller School of Journalism, Kansas Regents Network (Telenet), Kansas audio and videoconferencing network, and the Department of Communications Extension Television.

Information about the ECC's services and staff along with pictures of the facilities can be seen on the ECC website at www.k-state.edu/ecc.

Kansas Water Resources Research Institute (KWRRI)

The Kansas Water Resources Research Institute is part of a national network of research institutes in every state and trust territory of the U.S. established by law in the Water Resources Research Act of 1964. The network is funded by a combination of federal funds through the U.S. Geological Survey and non-federal funds from state and other sources. The mission of KWRRI is to develop and support research on the high priority water resources problems of the state, to foster the dissemination and application of research results, and to facilitate effective communication amongst water resources professions in Kansas. The mission is accomplished through: 1) Supporting research through a competitive grants program that encourages interdisciplinary approaches, interagency collaboration, scientific innovation, cost-effectiveness, relevance to present and future water resource issues/problems as identified in the State Water Plan, and dissemination and interpretation of results to appropriate audiences; 2) Fostering dissemination and application of results through conferences, briefings, white papers, and/or newsletters; and 3) Facilitating communication through an electronic network. KWRRI currently is administratively under the Kansas Center for Agricultural Resources and the Environment (KCARE) at Kansas State University.

Konza Prairie Biological Station (KPBS)

Dr. Eva Horne, Interim Director

Division of Biology

232 Ackert Hall

785-587-0441

Fax: 785-532-6653

E-mail: konza@ksu.edu

www.ksu.edu/konza

Konza Prairie Biological Station (KPBS) is a 8,600 acre tallgrass prairie preserve owned by The Nature Conservancy and Kansas State University and operated as a field research station by the K-State Division of Biology. The station is dedicated to a three-fold mission of long-term ecological research, education, and conservation. It is a unique outdoor laboratory that provides opportunities for the study of tallgrass prairie ecosystems and for basic biological research on a wide range of organisms and processes. The station is open to scientists and students from throughout the world. It also serves as a "benchmark" for comparisons with areas that have been affected by human activities, and as an environmental education facility for students and the public. KPBS is a member of the Organization of Biological Field Stations and the Association of Ecosystem Research Centers, and is a National Science Foundation Long-Term Ecological Research (LTER) site.

Libraries

Dr. Lori Goetsch, Dean of Libraries

Hale Library

785-532-7400

Fax: 785-532-7415

E-mail: library@gw.ksu.edu

www.lib.ksu.edu

Kansas State University Libraries provides support for the educational, research, extension and public service objectives of K-State. Staff acquires and maintains the libraries' electronic and print collection needed for the University to achieve its objectives.

K-State Libraries consists of four libraries: Hale Library, known historically as Farrell Library, Weigel Library of Architecture, Planning and Design (Seaton Hall), Fiedler Engineering Library (Fiedler Hall), Math/Physics Library (Cardwell Hall), and Veterinary Medicine Library (Trotter Hall). K-State Salina Library is a cooperating library that shares integrated electronic access systems and databases.

Reference staff provides assistance in helping patrons access materials or information needed. Staff help initiate literature searches and assist with electronic resources. Librarians, in addition to their reference staff duties, serve as subject specialists. Subject librarians, who are knowledgeable of the resources in a specific subject matter, assist patrons with their particular information needs. Subject librarians are available for one-on-one consultations or for groups and classes.

K-State Libraries offers state-of-the-art electronic data information retrieval systems for the catalog and databases unique for K-State's diverse academic areas. The libraries' web site provides information about its collections and services. An extensive section is devoted to electronic information available to K-State and around the world. Remote access to the libraries' electronic resources are available to K-State students.

The Information Commons is located in Hale Library, the main library. InfoCommons consists of more than 200 computers located on all four floors. The most attractive feature of InfoCommons is that it brings together electronic, print and microform resources. Also, InfoCommons is consistent among all student computing facilities supported by CNS. In addition, InfoCommons has technical assistance on hand to answer questions regarding the computers and application software. Another exciting feature of InfoCommons is the laptop computers available for check out.

Other areas in Hale Library providing information or access services include circulation, interlibrary services, government documents, microforms, science library, and reserves. The Anita C. Lehner 24-hour study area is available on the first floor. Most services available at Hale Library are also available at the branch libraries.

Award-winning Hale Library is impressive with its seven-arch loggia entrance, six and seven-story towers topped with decorative finials. Oak hardwood floors and brass handrails adorn the interior finishes. The carved and etched limestone facings, sculpted metal banisters and door ornamentations depict native Kansas plants, trees, shrubs and wildlife. The largest academic building on campus with nearly 400,000 square feet, centrally located on K-State's Manhattan campus, Hale Library is the academic heart of Kansas State University.

Nuclear Reactor

Dr. Mike Whaley, Nuclear Reactor Manager
112 Ward Hall
785-532-6657
E-mail: whaley@mne.ksu.edu
www.mne.ksu.edu/research/centers/reactor

The University operates a TRIGA Mark II nuclear reactor and related laboratories. Inherently safe by design, the reactor normally operates at 250 kW, but can be pulsed to peak power levels of 250 MW. Researchers throughout the world use the reactor for neutron activation analysis, neutron radiography, fission track studies, neutron spectroscopy, and isotope geochronology. The reactor is also used for student education and public demonstrations.

Particle Accelerators: James R. Macdonald Laboratory

Dr. Itzik Ben-Itzhak, Director
116 Cardwell Hall
785-532-6782
Fax: 785-532-6806
E-mail: jrmlab@phys.ksu.edu
<http://jrm.phys.k-state.edu/>

Kansas State University operates a national user facility, the James R. Macdonald Laboratory, which is supported by the U. S. Department of Energy. The laboratory has ion sources and particle accelerators that provide highly stripped heavy ions over an energy range of a few eV to the order of 100 MeV. This facility is dedicated to the investigation of the interactions of highly

charged heavy ions with atoms, ions, molecules, and surfaces. The equipment available to researchers includes a 7MV tandem Van de Graaff accelerator, a superconducting LINAC (booster/decelerator), an ion source for the production of highly charged low velocity heavy ions (CRYEBIS), a crossed beam ion-ion collisions facility, and five independent multiparameter data acquisition/analysis systems. The laboratory provides high-level technical support to aid users in the design, construction, and implementation of experimental projects. The laboratory is unique in its ability to provide long term access to state-of-the-art complex experimental apparatus related to ion collision studies.

Pollution Prevention Institute

Nancy Larson, Director
133 Willard Hall
785-532-6501
1-800-578-8898 (toll free)
Fax: 785-532-6952
E-mail: sbeap@ksu.edu
www.engg.ksu.edu/enggext/ppi

This institute provides free, confidential technical assistance and training in source reduction and other environmentally sound practices to businesses, regulatory agencies, technical assistance groups, and private citizens throughout the Midwest. The institute also serves as a meeting ground for faculty involved in pollution and other related activities.

Sensory Analysis Center

Dr. Delores H. Chambers, Co-director
Dr. Edgar Chambers IV, Co-director
145A Justin Hall
785-532-0166
Fax: 785-532-0176
E-mail: eciv@ksu.edu and delores@ksu.edu
www.sensoryanalysis.com

The Sensory Analysis Center, a part of the College of Human Ecology, is one of the outstanding providers of sensory services in the nation. The Center assists in teaching sensory analysis by providing students with opportunities to gain practical experiences and it provides outstanding research capabilities for university researchers and consumer products industries. Clients of the Center have included researchers on campus from numerous departments, Kansas businesses, and national and international corporations. The Center provides two major types of analyses: 1) descriptive analysis that defines the characteristics of a product or service and the amount or intensity of that characteristics, and 2) consumer evaluation that provides information on benefits, liking, or acceptance or helps to determine what consumers understand about the product, service, or information.

Technology and Aviation

Dr. Dennis K. Kuhlman, Dean
2310 Centennial Road
Salina, KS 67401-8196
785-826-2601
Fax: 785-826-2998
E-mail: dkuhlman@sal.k-state.edu
www.sal.k-state.edu

The College of Technology and Aviation, located at the Salina campus, provides a comprehensive array of associate and baccalaureate degree programs in engineering technology, aviation, and technology management. Many of the engineering technology programs are TAC of ABET accredited, while the aviation programs maintain FAA certification and accreditation by the Aviation Accreditation Board International. The college also engages in cooperative scholarship and creative endeavors with regional and national industry partners.

University Transportation Center

Dr. Brian Coon, Director
2118 Fiedler Hall
785-532-1573
Fax: 785-532-7717
E-mail: bcoon@ksu.edu
www.transport.ksu.edu

The University Transportation Center coordinates faculty, industry and governmental agencies in multidisciplinary research efforts focusing on the Center's Theme: The Sustainability and Safety of Rural Transportation Systems and Infrastructure. As rural populations throughout the United States are decreasing as well as becoming more elderly, the status of rural transportation systems becomes increasingly critical--both from a sustainability perspective as well as that of safety. The Center focuses on improving the quality of life of rural America through increased infrastructure life and economy, improved safety and EMS response times, improved driver training and testing, as well as bringing a holistic, multi-disciplinary perspective to transportation research. Transportation Engineering: transportation planning, transportation systems, analysis and simulation, geometric design of highways, highway safety, pavements and highway materials, and rural transportation policy. Psychology: driver behavior, driver education and testing.

International Programs

304 Fairchild Hall
785-532-5498
Fax: 785-532-6550
E-mail: oip@k-state.edu
www.k-state.edu/oip

The mission of the Office of International Programs is to lead the internationalization of Kansas State University by supporting and collaborating with faculty, students, and scholars in international education and research worldwide.

Building upon several decades of international involvement, K-State provides a range of programs that link the campus with other parts of the world. Many of these are coordinated through individual departments or colleges; others serve the whole university.

The Office of International Programs supervises the Education Abroad Program, the English Language Program, the International Student and Scholar Services unit, and provides a range of services and support to faculty and students.

Education Abroad Program

Katelin Christianer-Donkers, Director
Brent Holliday, Assistant Director
304 Fairchild Hall
785-532-5990
www.k-state.edu/abroad/

Education Abroad is the first stop for students planning to study, volunteer, intern, or research abroad. We offer a variety of academic programs that prepare students for success in an increasing global society. Programs range from short term faculty-led and group programs to individual summer, semester, and academic year opportunities. Programs are available in Africa, Asia, Australia, Europe, North America, and South America. With over one hundred programs worldwide, students are able to find a program that matches their needs and interests. Exchange programs involve reciprocal partnerships with universities abroad that

allow students to attend partner universities while paying K-State, in-state tuition and study abroad fees to K-State. Additional program options are available through direct enrollment and affiliated program providers. Faculty-led programs are study abroad courses taught internationally by K-State faculty and are coordinated by Education Abroad in cooperation with the academic departments.

Federal Financial Aid and most scholarships can be used towards study abroad. Education Abroad encourages students to apply for local and national study abroad scholarships in addition to the scholarships available through the Study Abroad Office. Select scholarships for foreign study are listed below:

Education Abroad Scholarships

Scholarships available through the *Office of International Programs/Study Abroad* include:

- Goss Discovery Scholarship
- Megan E. Taylor Czech Republic Student Award
- Duane and Shirley Acker International Scholar Award
- The Catherine Joyce Memorial Scholarship
- Doris Hays Fenton Memorial Scholarship
- The Heather Stewart Memorial Scholarship
- Mary Lynn Manning Study Abroad Scholarship
- Rodolfo J. Montes de Oca/Costa Rica Small Town International Scholarship
- The Vernon Larson Study Scholarship
- Veronica Bonebrake International Scholarship

Scholarships available through *other offices* include:

College of Agriculture International Study Scholarship

117 Waters Hall

College of Business Administration - Larry and Patricia Kendall Study Abroad Scholarship

1001 College of Business Building

College of Human Ecology International Study/Service Scholarships

119 Justin Hall

Blue Key

103 Leadership Studies

Department of Modern Languages Scholarships (language majors only)

104 Eisenhower Hall

Gilman, Boren, Fulbright, and Critical Languages Scholarship

Beth Powers

215 Fairchild Hall

International Student and Scholar Services (ISSS)

Stacey Bailey, Director
Bogi Davies, Associate Director
2012 Tunstall Cir., Building 7, Manhattan, KS 66502
785-532-6448
Fax: 785-532-6607
E-mail: iss@k-state.edu
www.k-state.edu/iss

The staff at International Student and Scholar Services (ISSS) provide vital services for K-State's around 2,500 international students, scholars, and their families. This includes advice on U.S. immigration regulations, support during their stay in the U.S., third-party sponsored student support, and cultural programs. The staff assists them with visa and passport issues, work authorization, entry and exit documentation, certification of status forms, housing, programming and personal concerns. ISSS also offers assistance to faculty and departments wanting to bring international scholars to the United States. Additionally, the staff serves the entire campus as a resource on international student and scholar issues. The office operates under the Office of International Programs and works with all facets of the University to implement and support both the goals of each student and scholar and the goals of the University in international education. Staff members provide leadership and support for a variety of programs that promote global awareness and understanding.

Admission Information for Graduate International Students

Admission Information for Undergraduate International Students

International Student and Scholar Services

English Language Program

Ketty Reppert, Director
Leena Chakrabarti, Associate Director of Student Services

205 Fairchild
1601 Vattier Street
Manhattan, KS 66506
785-532-7324
Fax: 785-532-6550
E-mail: elp@k-state.edu
www.k-state.edu/elp

The English Language Program (ELP) assesses English language proficiency and offers intensive English courses primarily for international students who plan to enter degree programs at K-State. However, it also accepts students who wish to come for English instruction only.

The program offers five levels of full-time intensive English along with advanced part-time courses specifically for students who need support in English while taking classes in their degree field. Information on the Graduate Pathway program is available in the Graduate Handbook.

For other information and a brochure, write or e-mail the English Language Program at the addresses above.

International Curricula

Students seeking to enrich their college experience and enhance their personal and professional development may take advantage of several interdisciplinary international education opportunities.

College of Agriculture

Don Boggs
117 Waters Hall
785-532-6151
Fax: 785-532-6897
E-mail: dboggs@k-state.edu
www.ag.k-state.edu

The College of Agriculture offers opportunities for international travel through faculty-led study tours, summer exchange programs, semester abroad program, and summer internships in other countries. Scholarship or grant support is provided for all College of Agriculture students who travel internationally to study topics related to their major. A minor in international agriculture is available to students with agricultural majors. The minor requires a combination of language, international course work, and experience abroad.

College of Agriculture International Scholarships

Contact: Don Boggs 785-532-6151

- Boggs International Agriculture Scholarship
- Brown International Travel Award
- Galle International Agricultural Scholarship
- Lewis International Study Scholarship
- Morgan Family International Study Scholarship
- Stunkel International Travel Award Honoring Fred Cholic
- Wolfe International Scholarship

College of Arts and Sciences

Robert Clark, Director International and Area Studies
014A Eisenhower Hall
785-532-1988
Fax: 785-532-7004
E-mail: ias@k-state.edu
www.k-state.edu/ias

The College of Arts and Sciences offers two international, interdisciplinary secondary majors and two minors to undergraduates in any college: International Studies secondary major and Latin American Studies secondary major, East Asian Studies minor and African Studies minor. For more information, reference to these programs select either or find them listed in Colleges and Departments.

College of Business Administration

Student Services
107 Calvin Hall
785-532-6180
Fax: 785-532-7809
E-mail: cbastusv@k-state.edu
www.cba.k-state.edu

The College of Business Administration offers several opportunities to its students to learn about global business issues and practices as they prepare to meet the future challenges in the global marketplace. In addition to study abroad programs and faculty-led trips abroad, business students can earn a Certificate in International Business offered by the College of Business Administration or earn a secondary major in International Studies offered by the College of Arts and Sciences. Scholarships are often available for business students who travel internationally to study topics related to their major.

International Service Teams

Kaitlin Long, Program Coordinator and Instructor
1300 Mid-Campus Drive N
Manhattan, KS 66502
785-532-6085
Fax: 785-532-6896
E-mail: KaitlinL@k-state.edu
<http://www.k-state.edu/leadership/programs/serviceteams/internationalteams/>

Since 1989, K-State has supported interdisciplinary teams of undergraduate students in service-learning experiences abroad. These teams work alongside community partners on locally organized and run community initiatives. The International Service Teams, a program of the Staley School of Leadership Studies, currently partners with community organizations in South Africa, the Dominican Republic, Kenya, Paraguay, and The Gambia. Participants apply and are selected in the fall semester prior to the summer experience; they enroll in a spring semester preparatory course before departing for an eight to ten week engaged service-learning experience during the summer. Students work with local community partners and are involved with ongoing reflection during their time abroad. Upon return to Kansas State, they participate in a reflection course to process their learning experience and plan for future action.

Services for Students

Academic Achievement Center

101 Holton Hall
785-532-6492
www.k-state.edu/aac

The Academic Achievement Center serves as the free academic support package for all K-State learners. We ensure that all learners have the opportunity for academic success by providing guidance through the learning process. Academic Coaching, Tutoring, and Success Tools are available both in-person and virtually.

Academic Coaching

Academic coaching is designed to support students in developing the skills and strategies necessary to achieve their academic and personal goals. Our Academic Coaches guide students to create and achieve an academic success plan that focuses on what they want to achieve. Any student can schedule an appointment or drop-in to meet with an Academic Coach.

Tutoring Services

Peer tutors facilitate the learning process through the development of a student's ability to learn by asking engaging questions, providing challenge alongside support, and teaching students the skills they need to succeed. We focus on the success of the learning process as a whole not just the end result. Tutoring Services offers two types of support. **Content Tutoring** is peer

assistance in a specific course you're enrolled in while **Study Skills Tutoring** develops key skills and strategies to be successful in college. Both **Content** and **Study Skills** are available via drop-in and appointment.

Success Tools

Success Tools are available for students to independently explore different strategies to improve time management, study skills, note-taking, and more. Success tools are available in-person and downloadable on the AAC website.

Career Center

Kerri Day Keller, Executive Director
148 Berney Family Welcome Center
705 N. Martin Luther King Jr Drive
785-532-6506
E-mail: careercenter@k-state.edu
www.k-state.edu/careercenter/

The Career Center facilitates the career readiness of students throughout the K-State community. The Career Center offers job search training, career advising, employer connections, and a staff dedicated to assisting students in the career development process. Gain an advantage by attending K-State career fairs, interviewing on-campus with employers or enrolling in credit-based courses for internship experiences.

Stop by the Career Center to:

- Schedule an appointment for personalized job search assistance.
- Shop our Career Closet and prepare for interviews.
- Drop in to get a resume critique or ask a quick question.
- Find job listings online (part-time, internship/co-op, and full-time).

See additional in person and online materials such as salary information, graduate school information, and other career advisor recommended resources.

Handshake is a free service for students to search for jobs and internships, make their resume visible to employers, learn about interview opportunities and find employer contact information to enhance their professional network.

Alcohol and Other Drug Education Service

Lafene Counseling and Psychological Services
785-532-6927
Fax: 785-532-3932
E-mail: counsel@k-state.edu
Web page: <https://www.k-state.edu/lafene/services/alcohol-education/>

The Alcohol and Other Drug Education (AODE) Service offers timely and accurate information on the physical effects and social issues related to alcohol and other drug use and abuse. Campus services provided include alcohol/drug information; basic assessment and intervention assistance; individual counseling for alcohol and other drug issues; professional referral resources, and educational presentations.

Cats' Cupboard

Shelly Williams, Morrison Family Director

1021 Denison
785-532-0367
www.k-state.edu/cats-cupboard

Cats' Cupboard – The Kansas State Food Pantry provides direct access to a variety of perishable and non-perishable foods, hygiene products, and gently used kitchen supplies. Located at 1021 Denison in a newly renovated facility that opened in Fall 2023. Open Monday through Thursday 10am-6pm and Friday 10am-2pm. Active K-Staters (full/part-time students, staff/faculty, and visiting scholars) are welcome to shop. Take what you need, give what you are able, and be mindful of your fellow Wildcat!

Center for Advocacy, Response, and Education (CARE)

206 Holton Hall
785-532-6444
Fax: 785-532-6457
E-mail: ksucare@k-state.edu
www.k-state.edu/care

The Center for Advocacy, Response and Education (CARE) is a safe space for any member of the K-State community who has been affected by dating, domestic, and sexual violence, stalking or harassment to receive confidential services. CARE collaborates across identities and sheds light on the realities of psychological emotional, financial, physical and sexual forms of violence. CARE challenges the campus community to join us in advocating for positive social change while addressing the influences and social patterns that lead to interpersonal violence and other forms of oppression.

Cooperative Houses

Smurthwaite Leadership/Scholarship House

1500 North Manhattan Avenue
Manhattan, KS 66502-4695
785-532-6453
E-mail: housing@k-state.edu
www.housing.k-state.edu

The Smurthwaite Leadership/Scholarship House is a unique cooperative living option for women interested in a focused leadership experience. Smurthwaite is located on the east side of campus and houses approximately 46 women. This vibrant community emphasizes academics, leadership, campus involvement and community service – the four pillars of Smurthwaite.

Smurthwaite residents pay a lower rate for room and board while assisting with the day-to-day operation of the house, such as front desk duty. Residents are required to maintain a 3.0 cumulative GPA, be involved in on-campus clubs, participate in philanthropy and volunteer activities, and attend Smurthwaite-sponsored programs and house meetings.

Those who wish to live in Smurthwaite complete the Residence Hall Contract. On the contract the student can indicate their interest in living in Smurthwaite and also complete the Smurthwaite Interest form available in the contract confirmation email. Students invited to live in Smurthwaite will complete a contract addendum prior to move in.

Lafene Counseling and Psychological Services (CAPS)

1105 Sunset, Rm. 101
Phone: 785-532-6927
Fax: 785-532-3932
E-mail: counsel@k-state.edu
www.k-state.edu/counseling

OFFICE HOURS: Throughout the academic year, CAPS is open Monday through Friday from 8:00 am to 5:00 pm. During all academic breaks, including summer, CAPS is open Monday through Friday from 8:00 am to 12:00 pm and 1:00 pm to 5:00 pm.

WHAT WE DO:

Kansas State University Counseling and Psychological Services (CAPS), in support of the overall mission of the University, provides high-quality professional services to help all students meet their full potential – personally, academically, and socially. Within an accepting, sustaining, and compassionate setting, CAPS provides professional resources to attend to our students' psychological needs by promoting wellbeing, alleviating concerns, facilitating problem resolution, and enhancing their success. We see students with a wide range of concerns from difficulty adjusting to college to more serious mental health issues. When students' needs are beyond the scope of our services, we offer options in the community.

As professional staff, we value our campus community and empower students to improve their mental health. We are committed to ethical and competent treatment consistent with our training, experience, and K-State's mission as a land-grant university. Our services are available to all enrolled students who have paid the student services fee included in their tuition bill.

While appropriately protecting confidentiality, we work collaboratively with other entities, both on and off campus, to foster a safe and healthy environment. During critical events, we are ready to offer timely response to campus through consultation, outreach, and follow-up to reduce trauma and promote resolution.

Confidentiality means that your contact with this office is not part of your academic records, and clinical information will not be disclosed to any other office or individual unless you have given us written permission, or there is a legal mandate, to do so. CAPS staff is exempt from Title IX and therefore, they do not report crimes that include sexual violence (including rape, sexual assault, and sexual harassment) to university officials.

OUR STANDARDS: CAPS staff, including those in the APA-accredited Internship in Health Service Psychology, adhere to the appropriate ethical code for our respective professions, such as the American Psychological Association, American Associate for Marriage and Family Therapy, American Counseling Association, and licensing/legal standards for our professions.

FEES: CAPS is funded in part by the student service fees. Students receive free services for therapy, while a nominal fee is charged for additional services such as ADHD assessments. Contact our office by phone for more details.

Student Belonging

Mirta Chavez, Assistant Vice President
785-532-6276
E-mail: mirta@ksu.edu
<https://www.k-state.edu/academic-success-student-affairs/about/belonging/>

Fostering mutual understanding among all students, faculty, and staff helps create a campus atmosphere where every student feels they belong. Meet new people and celebrate your unique identity. Attend events and gain access to resources designed to help you thrive.

As part of the Division of Academic Success and Student Affairs (DASSA), we work to provide an impactful and holistic K-State experience by closely aligning student life resources with academic support programs and services. Student Belonging partners across all sectors of the university to foster an atmosphere in which all students are supported, celebrated, and included.

Student Engagement & Belonging

Morris Family Multicultural Student Center

785-532-6284

Morris Family Multicultural Student Center (k-state.edu)

The Morris Family Multicultural Student Center is your hub for intercultural learning and collaborative initiatives. The Center is open to all. Located immediately east of the K-State Student Union, the Center offers an opportunity for people of all cultures, backgrounds, and identities to explore their cultural origins, engage in meaningful cross-cultural interactions and broaden perspectives. The Center enriches our learning environment and fosters a supportive, welcoming atmosphere that promotes student academic success and personal empowerment, and contributes to the overall culture of K-State and Manhattan communities.

Spectrum Center

Mariya Vaughan, Interim Coordinator

207 Holton Hall

785-532-5352

E-mail: spectrum@k-state.edu

K-State's Spectrum Center

The Center provides support, workshops, scholarships, events, and representation of the LGBTQ campus community to engage in multiple platforms to advance learning around intersectional identities through educational presentations, student supports, and committee representation. The Center provides support to students and their organizations, such as the Sexuality and Gender Alliance (SAGA), Gender Collective, and STEM at K-State.

Educational Supportive Services Manhattan and Student Support Services Salina

Eric Thompson, Director

103 Holton Hall

785-532-5642

Fax: 785-532-6457

E-mail: ess@k-state.edu

www.k-state.edu/ess

Income limited students and first-generation college students are assisted in setting and attaining realistic educational goals and are provided information about graduate-level educational opportunities. Students admitted and enrolled at K-State are offered educational supportive services including study skills and academic enrichment program courses, academic pre-advising, individualized tutorial assistance, and a variety of referral services. Both programs are funded through a federal TRIO grant.

Graduate Student Council

Graduate Student Council (GSC) is the student organization representing graduate students from all academic disciplines at Kansas State University. Any organization with graduate student membership is invited to participate in the council and council activities are open to all graduate students.

GSC is a highly active student governing board for graduate students. GSC provides students with professional development, networking and leadership opportunities. GSC awards students travel grants to present their research and scholarly work at professional meetings and to attend conferences. Students participate in a variety of networking events sponsored by GSC and other graduate student organizations.

- The council meets on the first Monday of every month.
- The Graduate Student Council is funded mainly the Student Governing Association from the Graduate Student Activity Fee. Access the GSC constitution (PDF).
- You must register your organization each year to remain active with the Graduate Student Council.

Leadership Opportunities

There are various ways to get involved with Graduate Student Council. Every council member is encouraged to serve on a committee, including the Allocations Committee, GRA/GTA/GA Affairs Committee, International Affairs Committee, Research Forum Planning Committee, and Ice Cream Social Planning Committee. Members also publicize GSC events and help maintain the website. Council officers are elected during the spring semester. Officers include the president, president-elect, secretary, and treasurer. All graduate students are encouraged to participate in the council activities. Membership in the standing committees are open to all graduate students.

Professional Development

GSC strives to provide informational meetings, workshops and forums that enhance the professional development of graduate students. The council promotes interdisciplinary activities to enrich graduate students' education beyond their own disciplines. The council also sends out information on various seminars held across campus every week to the Council members, to be shared with their graduate student groups.

If you have any questions, contact the GSC officers: egsc@k-state.edu.

Housing and Dining Services

Derek Jackson, Associate Vice President for Community, Dir. of Housing and Dining Services

104 Pittman Building

1531 Mid Campus Dr. North

1-888-568-5027 (toll free)

785-532-6453

Fax: 785-532-6855

E-mail: housing@k-state.edu

www.housing.k-state.edu

The university requires all incoming Manhattan campus first-year K-State students to live on campus during their first two semesters. As part of a residential community, students have a sense of belonging and an avenue for involvement, as well as many opportunities for interaction with other students and university staff. Furthermore, the opportunity to participate in organized social, athletic, and educational events contributes to overall academic success.

More than 5,000 students call our campus home. With ten residence halls, one leadership/scholarship house for women, a house for honors students and a large apartment community to choose from, Housing and Dining Services has something for everyone.

Residence Halls

K-State residence halls have a long-standing tradition of providing a living and learning environment that encourages personal growth and academic success. It is for this reason that residence hall living is required for a student's first year and recommended for a student's second year at K-State, and that many upper-division students decide to remain in the halls.

In this ideal transition from home to school, students benefit from direct access to helpful staff, dining service, tutoring programs, technical support, on-site laundry facilities, leadership opportunities and more. They're close to classes, and living among fellow students provides many opportunities to develop lifelong friendships.

A student can submit a Housing Information Request form in mid-September. This form notifies Housing and Dining Services that this student would like to receive more information about the upcoming contract process. In early December the student will be able to complete the Residence Hall Contract and submit a contract payment which includes a \$30 non-refundable processing fee and a \$200 initial contract payment. The cost of the contract is determined annually, and following an initial payment, the remaining balance due will be billed to the student's KSIS account.

Jardine Apartments

Jardine apartments provides on-campus apartment living for students who are upper division, graduate, nontraditional, married (with or without children) or single parents.

This unique apartment community offers a wide variety of floor plans to choose from. Different price points include options in modern, highly renovated, renovated and traditional apartments. Also in Jardine is the Hybrid Option, which allows students to rent space at Jardine by the bedroom. Activities help residents get involved and stay connected, and a trained professional staff, including a 24-hour maintenance crew, is available to assist residents. Residents have the benefit of an on-site sports grill, coffee shop, and laundry facilities.

Housing and Dining Services begins accepting applications for Jardine apartments in mid-September. The student will indicate on the application the preferred apartment types and whether roommate(s) or family members will also reside in the apartment and submit the \$30 non-refundable processing fee.

Apartment selections for the fall semester typically begin the first week of March. Applicants will be notified by email prior to March when their specific apartment selection time will begin. Applicants can log in to the Resident Portal and view all of the currently available apartments and select the apartment of their choice.

To secure the apartment, the student must complete the Jardine Agreement and submit a \$400 deposit payment.

Smurthwaite Leadership/Scholarship House

The Smurthwaite Leadership/Scholarship House is a unique cooperative living option for women interested in a focused leadership experience. Smurthwaite is located on the east side of campus and houses 46 women. This vibrant community emphasizes academics, leadership, service, friendship and equity — the five pillars of Smurthwaite.

Smurthwaite residents pay a lower rate for room and board while assisting with the day-to-day operation of the house, such as front desk phone duty. Residents are required to maintain a 3.0 cumulative GPA, be involved in on-campus clubs, participate in philanthropy and volunteer activities, and attend Smurthwaite-sponsored programs and house meetings.

Those who wish to live in Smurthwaite complete the Residence Hall Contract. On the contract the student can indicate their interest in living in Smurthwaite and complete the Smurthwaite Interest form available in the contract confirmation email. Students invited to live in Smurthwaite will complete a contract addendum prior to move in.

Academic Initiatives

On-campus living environments offer individualized academic support to residents through trained staff, programming and faculty involvement. Computer stations, study spaces, workshops and more help improve academic skills and make the residence halls a great environment for learning and academic success.

Residential CAT Communities

Residential Connecting Across-Topics (CAT) Communities are a set of learning communities specifically created for first-year students. A group of 22 students with similar interests take classes, live, eat and study together in the residence halls. The communities offer mentoring from a professor and an advanced undergraduate Residential Learning Assistant who also lives with the students. This is a great way for students to make connections and quickly become an active part of life on campus.

Leadership and Involvement Opportunities

Hall Governing Boards, the Jardine Residents' Council, and floor governments plan and implement intramural events; community service projects; educational, cultural and social programs and more. Judicial boards provide an opportunity for students to address one another regarding policy violations that impact the community. The Kansas State University Association of Residence Halls plans hall-related events and works closely with hall representatives to develop and implement policies that promote respect and acceptance among all residence hall students. The Little Apple Chapter of the National Residence Hall Honorary recognizes the top 1 percent of residents who have contributed outstanding service and leadership in the residence halls while demonstrating academic excellence.

International Student and Scholar Services (ISSS)

Dr. Sara Thurston, Director
104 International Student Center
785-532-6448
Fax: 785-532-6607
E-mail: iss@k-state.edu
www.k-state.edu/iss

The staff at International Student and Scholar Services (ISSS) provide vital services for K-State's around 2,500 international students, scholars, and their families. This includes advice on U.S. immigration regulations, support during their stay in the U.S., and cultural programs. The staff assists them with visa and passport issues, work authorization, entry and exit documentation, certification of status forms, housing, programming and personal concerns. ISSS also offers assistance to faculty and departments wanting to bring international scholars to the United States. Additionally, the staff serves the entire campus as a resource on international student and scholar issues. The office operates under the Office of International Programs and works with all facets of the University to implement and support both the goals of each student and scholar and the goals of the University in international education. Staff members provide leadership and support for a variety of programs that promote global awareness and understanding.

ISSS is housed in the International Student Center which is composed of three building that have been completely funded by private gifts to K-State. The Taiwan Wing houses most of the staff. The Korean Room houses the director's office and office meeting space. The Center provides a comfortable relaxed atmosphere where people can meet or attend various programs. It includes a multipurpose meeting room, kitchen, reading lounge, and small classroom. Rental of the facilities is available.

Kirmser Language Center (KLC)

01 Eisenhower Hall
785-532-6760

Making learning enjoyable...if you are a faculty, or a student enrolled in a language course, come on in! You are invited to the Kirmser Language Center. We will provide you audio, video, and computer multimedia services for both undergraduate and graduate level courses within the Department of Modern Languages. The KLC currently serves about 1,250 students each semester, and offers a variety of resources. The Kirmser Language Center is the location for students to have their language skills tested prior to enrolling in most language courses.

K-State Student Union

Erik Kahl, Executive Director
K-State Student Union
Director's Office, Union 214, Second Floor
785-532-6591
Fax: 785-532-6565
E-mail: union@k-state.edu
union.k-state.edu

Union Mission Statement: **The K-State Student Union**

To serve all, especially students, with facilities that provide services, programs, leadership experiences and educational opportunities which foster a sense of well-being, belonging and community.

Since opening its doors in 1956, the Union has been the host to the campus and the community. The Union plays an integral role in the educational mission of the university and its diverse programs and services are supported by student fees and generated revenue. The Union is the exciting hub of campus life and provides a gathering place and a common ground for students, faculty, staff, alumni, university departments and the greater Manhattan area. All revenues generated at the Union assist in funding programs, opportunities and services for the campus community.

BOOK A SPACE

No matter what type of event you are planning – from a small executive retreat to a large annual convention to a storybook wedding reception – the Union has a perfect space for you. With approved caterers, cutting-edge technology and a variety of event spaces, we can accommodate any and all types of professional and personal events. Rooms are offered at a discount to students, faculty, staff and registered student organizations.

FOOD AND FUN

Foodies and students alike will be able to enjoy a diverse mix of delicious cuisines ranging from burgers and barbecue to salads and wraps. With national chains like Subway, Chick-fil-A and Panda Express as well as local favorites such as Radina's Coffeehouse, you'll find what you crave at the Union's many restaurants and cafes. The Wildcat Value Meal program highlights a \$7 specialty meal at a variety of Union restaurants.

The Union proudly participates in the Dining Dollars program, a flexible dining option for students, faculty and staff. Dining Dollars can be purchased as a standalone plan or as an optional add-on to a meal plan, adding additional options to the on-campus dining experience.

- Chick-fil-A

Known for its original chicken sandwich and waffle fries, Chick-fil-A's menu of fresh, handcrafted food includes breakfast and lunch/dinner options.

- Fast Track

Fast Track is the quick and flavorful option for campus patrons. Offering a variety of classic American foods, including K-State's own Weber Hall beef burgers, brick oven fired pizza along with BBQ smoked in-house daily and freshly made salads.

- **Hunt Brothers Pizza**

Located on the lower level of the Union, Hunt Brothers® Pizza brings America's #1 made-to-order and by-the-slice **pizza** to campus and offers 10 toppings to choose from for no extra charge. That's 1,024 topping combinations at one price!

- **Panda Express**

Panda Express is best-known for its wide variety of original recipes including its Original Orange Chicken™, SweetFire Chicken Breast®, award-winning Honey Walnut Shrimp and Shanghai Angus Steak

- **Qdoba Mexican Eats**

Satisfy your cravings with tasty Mexican food like our burritos, 3-cheese nachos, and more! At QDOBA, our food philosophy lies in crafting thoughtful flavor combinations that will satisfy your biggest cravings and leave you counting down the days until you're back for more.

- **Radina's Coffeehouse and Roastery**

Radina's Coffeehouse & Roastery is dedicated to providing fresh, handcrafted coffee roasted to its peak flavor. With four locations on the K-State campus, Radina's serves high-quality and individually unique coffees from around the world. Known for its in-house, specialty roasted drinks, Radina's has many options to satisfy the choosiest coffee connoisseur.

- **Subway**

Subway is your go-to spot for a menu of fresh, nutritious sandwiches in a casual atmosphere. Subway also offers a variety of options for all of your group gatherings, including party platters, party subs and bag lunches.

- **Union Station by JP's**

Through a partnership with K-State Housing and Dining Services, Union Station by JP's brings the campus and the Manhattan community together around a table filled with excellent food. A K-State original modeled after JP's in the Jardine Complex, Union Station menu items are locally sourced when possible, including Weber Hall meats .

The Cats' Den Convenience Store is the best place to pick up a drink or a tasty snack between classes. ReFresh-ReThink-ReFuel at the Cats' Den alternative snack area featuring gluten-free, vegan, organic, natural and energy/power options. We stock a variety of soft drinks, juices, energy drinks, snacks and sandwiches, as well as our freshly popped popcorn.

Not in the building? The Union provides options around campus with additional Radina's Coffeehouse and Roastery locations in the Engineering Complex and the College of Business Administration building. Whatever your palette craves, the Union has the fix.

Wabash Cannon Bowl, the Union Bowling Center, located on the Union's lower level, is the best place for relaxing on campus. Whether it's something fun to do between classes or an evening with friends, the Wabash Cannon Bowl is the place to be. The center is equipped with 16 bowling lanes, billiard tables, two air hockey tables, a video arcade, and a reservable party room. Student bowling leagues are always very popular, and billiard leagues are also available. The recreation center is also available for group gatherings.

Esports has found a home in the Union. Located in the Union Bowling Center, the arena is outfitted with state of the art equipment including two Nintendo Switches. Esports is open seven days per week. The K-State Esports Club is a student organization dedicated to fostering a community of individuals passionate about playing video games at all levels. The club welcomes those who play competitive game as well as students interested in other events and activities.

SHOPPING AND SERVICES

The official K-State Campus Store is located on the Union's ground floor, is not only the most convenient place to get your textbooks but also has a great selection of K-State merchandise and apparel. Textbook options ranging from new to used, rental to digital are designed for student savings. The official K-State booklist is available online at kstatecampusstore.com. Textbook

information (including ISBN, author, title, publisher and copyright data) is available at courses.k-state.edu. When viewing a course, click on the textbook icon for textbook details. For more information, contact 785-532-6583.

Cat Tech, the Union computer store, is a full-line computer store and an Apple authorized educational reseller. Students can receive discounts on Apple computers, Microsoft and Adobe products, as well as other academic software. Cat Tech carries an extensive inventory and variety of computer supplies, including MacBooks, the complete line of Apple iPads, and a large selection of Apple accessories. Online shopping is offered 24/7 at kstatecampusstore.com. Stop by the location on the Union's ground floor or give us a call at 785-532-7319.

All students, faculty and staff can get their official university ID card, the Wildcat Card, at the ID Center, located on the ground floor of the Union. Wildcat Cards can be used as a photo ID, access/entry card, library card, and Cat Cash on-campus debit account. Cat Cash is ideal for anyone who carries a Wildcat ID and spends time on campus. The ID Center can assist with card replacements, Cat Cash deposits and Union gift card purchases. If you have any questions, contact 785-532-6399 or wildcatcard@k-state.edu.

GET INVOLVED

Student Programs and Involvement

Sara Heiman, Director
Student Programs and Involvement
K-State Student Union
785-532-6541
E-mail: studentinvolvement@k-state.edu
<https://www.k-state.edu/student-involvement>

Student Programs and Involvement provides opportunities for students to get connected, engaged, and involved at K-State. The office oversees student organization recognition for the University, and provides leadership development trainings and resources for group officers and advisors. SPI also manages K-State's student involvement platform, OrgCentral, as well as the co-curricular engagement program, Cat Trax. SPI coordinates Week of Welcome, an event series that takes place every fall and spring semester, and SafeRide operated by Lyft(R). SPI supports the voice of the student body, Student Governing Association, and campus activities through the sponsorship of Union Program Council.

Student Organizations

More than 400 organizations are available to students, faculty members, staff, and community members.

Any organization desiring to become a recognized organization must register with Student Programs and Involvement. Registered groups have the opportunity to request funds from SGA, hold fund-raising activities on campus, and schedule rooms and tables in the K-State Student Union as well as most campus facilities. Recognized student organizations may also post notices in university buildings and on campus bulletin boards.

OrgCentral

<https://orgcentral.k-state.edu>

OrgCentral is K-State's online student organization management and student engagement platform. Students can explore upcoming events, engage in student organizations, and connect with other students using the platform. All registered student organizations have a group page in the system to manage their organizational operations. All currently enrolled students and university employees have an account created automatically and can use their eID and password by clicking the "school login" button on the site.

Cat Trax

orgcentral.k-state.edu/cattrax

Cat Trax serves as a guide to help students transition to campus, connect with resources, build social capital, and develop career readiness competencies and skills. Cat Trax identifies experiences every K-State student should have and organizes these experiences into a checklist. Students earn rewards for completing checklist items. Students can explore their Cat Trax checklist in OrgCentral.

SafeRide

Email: saferride@k-state.edu

SafeRide operated by Lyft provides all students on the Manhattan campus free or discounted rides within the city limits during the eligible time windows utilizing the Lyft app. SafeRide is a program funded by students for students through the Student Services Fee as a program that meets immediate student needs and safety concerns.

Week of Welcome

Email: wow@k-state.edu

Week of Welcome is an event series that takes place during the first week of class in the fall and spring semesters. Week of Welcome programs and activities ease the transition into the academic term by helping students establish connections with their peers, familiarize themselves with campus, and explore involvement opportunities and important resources for their success.

Lafene Health Center

Kara Fiske, Executive Director, Student Health and Counseling and Psychological Services

1105 Sunset Avenue

Manhattan, KS 66502-3761

785-532-6544

Fax: 855-673-4137

E-mail: lafene@k-state.edu

www.k-state.edu/lafene

Lafene Health Center is an outpatient health care facility designed to meet the healthcare needs of Kansas State University students and the campus community. The health center is fully accredited by the Accreditation Association for Ambulatory Health Care (AAAHC). Enrolled students who have paid their student services fee are eligible for care. Non-student spouses, university conference participants, and other campus visitors may receive care with prior approval of Lafene Health Center Administration. Non-student patients will be required to pay non-student rates for services received.

Lafene Health Center provides, through a full complement of medical and other professional personnel, a range of services that include special clinics for sports-related injuries, gender care, allergies and immunizations, dermatology, as well as a clinic for general care. Services in health and well-being education, massage therapy, nutrition, physical therapy, pharmacy, laboratory, and x-ray are also available at reduced rates for eligible students.

The Health Center is staffed by health care professionals and support personnel in various areas. When necessary, students may be referred to external specialists for care at their own expense.

Insurance

It is strongly recommended that all students at K-State carry health insurance, either through a parents' plan at home or an employer's health plan or through student health insurance plans available from the Kansas Board of Regents (KBOR). It is required for International Students to carry health insurance specifically designed for International Students. The KBOR student insurance plan covers most services provided at Lafene Health Center and covers a wide variety of healthcare services outside of Kansas State University. The KBOR webpage can provide up to date details about the insurance plans offered to Kansas State University students.

Lafene Health Center's MyLafene Patient Portal

All incoming K-State students must check out the MyLafene patient portal. Have health insurance information ready to upload along with your immunization records. The portal allows students to make appointments, upload information to meet State of Kansas and University requirements, and communicate with Lafene providers. Lafene's webpage contains a wealth of information that can assist students with their health and well-being needs during their time at K-State.

Tuberculosis Screening

International students from countries with a high incidence of tuberculosis and domestic students who have spent more than three months in a country are required by state law to be screened and potentially tested for tuberculosis prior to enrolling at K-State. Screening and testing can be completed through Lafene Health Center or another healthcare provider outside of Kansas State University. Proof of testing and the results are required if not completed at Lafene Health Center.

Incoming Students Residing in University-owned Housing

Kansas Statute and the State of Kansas Board of Regents policy requires all incoming students residing in university-owned housing to be vaccinated against meningitis or sign a document waiving the vaccination. The vaccine can be obtained by appointment at Lafene Health Center or the student's private physician. Meningococcal Vaccine Documentation Forms are available through the Lafene Health Center website and by using the MyLafene patient portal.

McNair Scholars Program

Vacant, Director
101 Holton Hall
785-532-6137
E-mail: mcnair@k-state.edu
www.k-state.edu/mcnair

The McNair Scholars Program, named for the African American astronaut who died in the 1986 space shuttle explosion, encourages and prepares academically promising students to pursue doctoral degrees. McNair Scholars are from income-limited and first-generation college educated backgrounds or are from minority groups who are underrepresented in graduate study.

Staff will assist McNair Scholars in selecting an appropriate graduate school for their career goals, in preparing for the Graduate Record Examination, and in applying for graduate admittance and financial assistance. Each year McNair Scholars will be matched with a faculty mentor and will work on research projects for which they will receive a stipend. The McNair Scholars Program is funded through a federal TRIO grant.

Morrison Family Center for Student Well-being

Chris Bowman, Director
K-State Student Union, Rm 217
918 N MLK Jr. Dr.

785-532-6595

E-mail: wildcatwellbeing@k-state.edu

<https://www.k-state.edu/center-for-wellbeing/>

The Morrison Family Center for Student Well-being is an office at K-State committed to fostering the physical, social, and emotional well-being of students through education, outreach, and support. The Morrison Family Center for Student Well-being uses evidence-based strategies and best practices to develop campus-wide programs that inspire our communities in health promotion, prevention, and well-being. The well-being center uses their expertise and knowledge to create relevant, holistic, and lasting well-being strategies to create **WellCATS for Life**. Visit our website for more information and a complete list of our well-being programs and offerings.

New Student Services

Executive Director

Berney Family Welcome Center

705 N. 17th Street

785-532-6318

Fax: 785-532-3696

E-mail: nss@k-state.edu

www.k-state.edu/nss

New Student Services works with prospective and new students and their families. Admissions representatives meet with high school students during school visits, college fairs, and special events. Transfer staff visit Kansas community colleges and help transfer students successfully make the transition to K-State.

New Student Services coordinates campus visits, orientation and enrollment, Wildcat Warm-up, StrengthsQuest™ Initiative, Blue Key Honor Society, Welcome Center Ambassadors and the Presidential Lecture Series. The department collaborates with many campus programs and departments to provide services to prospective, new and current undergraduate students.

Military-Affiliated Resource Center and Non-Traditional Student Services

Amanda Etter, Director

Military Affiliated Resource Center

2nd Floor Student Union

Room 217

785-395-8387

Non-Traditional Student Services

Student Support and Accountability

785-532-6432

E-Mail: kstatenontrad@k-state.edu

www.k-state.edu/nontrad/veteran/

Non-Traditional & Veteran Student Services assists undergraduate and graduate students who meet one or more of the following criteria:

- 25 years of age or older
- Married
- Parent

- Veteran
- Returning to school after an absence of 3 or more years

Non-Traditional & Veteran Student Services provides assistance and advocacy for students before, during, and after their admission to K-State. Staff members assist students in obtaining information and/or providing referrals in many areas, including: admission, scholarships, childcare, housing, tutoring, refresher and study skills courses, student health insurance, campus activities and community programs, non-traditional student networking opportunities, and many other student questions/concerns.

Off-Campus Housing Support

The Off-Campus Housing Support is located at Student Support and Accountability, 201 Holton Hall, 785-532-6432. The coordinator of off-campus housing support students resolve issues or answers questions regarding landlord problems or rental contracts. Students can also find information about rental units, with information on cost, size, restrictions, etc., and other housing options.

Fraternity and Sorority Life

Dee Hawks, Director, Fraternity & Sorority Life
 004 K-State Student Union
 785-532-5546
 E-mail: greeklife@k-state.edu
<https://www.k-state.edu/fraternity-sorority/>

K-State is home to more than 3,500 fraternity and sorority members. The Fraternity and Sorority Life office supports the Interfraternity Council and the Panhellenic Council community. The communities consist of 35 chapters, 30 of whom own and control their own residential facility. The average Panhellenic sorority size is 125, and the average IFC fraternity size is 70.

Panhellenic sororities select a majority of their members during Fall Formal Recruitment which happens the week prior to the start of the fall semester. Women who wish to participate in the Formal Recruitment process must register on the Fraternity and Sorority Life website and pay a participation fee by no later than August 1. Throughout the year, individuals may have additional informal opportunities to join chapters through the continuous open bidding process. These opportunities can vary widely. You can learn more about informal joining opportunities on this website. For Panhellenic members, most new members live in a residence hall during their first year membership and may move into the sorority house their second year of membership. Live in requirements can vary by chapter and can be discussed during any recruitment conversation.

Interfraternity Council fraternities select new members through an informal, chapter-driven process. This process mainly occurs beginning in the late fall and continues throughout the spring and into the summer. Most new members live in their fraternity house during the first year of membership if the chapter owns a property. Men may fill out an interest form on the website and find contact information for chapter recruitment chairs.

Complete information regarding fraternities and sororities including costs, how to register, recruitment dates and methods, the recruitment week schedule for sororities, and a list of K-State fraternity and sorority chapters can also be found on the Fraternity and Sorority Life page.

Information about NPHC fraternities and sororities and other national organizations that select new members via the intake process can also be found on the Multicultural Greek Orgs page, housed within Student Belonging.

Office of Nationally Competitive Scholarships

Jim Hohenbary, Director
 215 Fairchild Hall

785-532-3422

E-mail: jimlth@k-state.edu

<https://www.k-state.edu/leadership/scholardevelopmentandundergraduateresearch/scholardevelopment/national-scholarships/>

The Office of Nationally Competitive Scholarships assists K-State students as they compete for nationally competitive awards such as the Rhodes, Marshall, Truman, Goldwater, Udall, and Fulbright.

The office helps students identify awards that might suit their accomplishments and goals, advises students as they prepare their applications, and manages the campus selection process for scholarships and fellowships that require applicants to be nominated by their university.

A strong academic record and active résumé are essential for applications. Students interested in competing for major awards are encouraged to consult with the office as early as possible in their college career.

The office website provides a much larger listing of national and international scholarships and fellowships. Note that the office primarily advises students regarding major award competitions that are external to the university. Students seeking information about K-State scholarships should consult the Office of Student Financial Assistance and their academic departments.

Student Support & Accountability

Andy Thompson, Assistant Vice President and Senior Associate Dean

Allison Coleman, Assistant Dean and Director of Conduct

Laurel Moody, Senior Assistant Dean

Janelle Rieger, Assistant Dean

201 Holton Hall

785-532-6432

Fax: 785-532-5307

E-mail: stulife@k-state.edu

<https://www.k-state.edu/student-support/>

The mission of the Student Support & Accountability Office is to enhance the K-State student experience and promote student success in the classroom and in life. The Office of Student Support & Accountability helps when problems arise, working with students and with other campus services to find the most appropriate and effective solutions. The Office of Student Support & Accountability also serves as one of the approved offices for students to receive excused absences through the approve policy. The Office of Student Support & Accountability is also a resource for parents who may have concerns or questions. The Office of Student Support & Accountability administers the judicial programs for non-academic misconduct and works closely with the student judicial system.

Powercat Financial

Kate Mielitz, Executive Director

302 K-State Student Union, Third Floor

785-532-2889

E-mail: powercatfinancial@k-state.edu

www.k-state.edu/powercatfinancial

Powercat Financial assists students with financial decisions including budgeting, saving, student loan repayment, and understanding credit. The center is free to K-State students and uses a peer mentor program where students studying in a finance related curriculum provide one-on-one peer financial counseling and education to fellow students. In addition to individual confidential counseling, the center provides free workshops to campus groups and organizations about various financial topics. The goal of Powercat Financial is to improve the financial literacy and success of all K-State students. Visit the Powercat

Financial website to schedule an appointment, to request a financial workshop presentation, or to learn more about financial issues.

Recreational Services

Clint Hafliger, Director

Chester E. Peters Recreation Complex

1831 Olympic Drive

785-532-6980

Fax: 785-532-4983

E-mail: recservices@k-state.edu

www.recservices.k-state.edu

Recreational Services oversees the programming and administration of intramurals, fitness/wellness programs, climbing wall, K-State challenge course, and free time use of the Peters Recreation Complex, outdoor recreation area and the K-State natatorium.

Chester E. Peters Recreation Complex

fully accessible and includes:

- 8 racquetball courts
- five performance zones
- two squash courts
- two wallyball courts
- three gyms that include:
 - 13 basketball courts
 - 15 volleyball courts
 - 5 badminton courts
 - 2 pickleball courts
- multi-activity court (MAC) gym provides for indoor soccer, in-line hockey, basketball, volleyball and tennis
- three weight rooms
- two cardio areas
- combatives room
- four group fitness and studios
- one multipurpose room
- private personal training studio
- 40-ft climbing wall and bouldering rock
- Quik Cats Cliffside snack/juice bar
- game lounge offering video game stations, pool tables, foosball and electronic darts
- two indoor tracks
- table tennis area
- locker rooms with saunas
- southside parking lot exclusively for students
- pickleball courts

Outdoor Recreation Area

- lighted playfields for football, soccer, softball, ultimate
- four sand volleyball courts

- six tennis courts
- three basketball courts
- two 3-wall handball/racquetball courts
- running/walking trails

Outdoor Rental Center

offers equipment rentals to the K-State community during spring, summer and fall seasons

- camping equipment
- canoes, kayaks, and stand-up paddle boards
- tents and sleeping bags
- hammocks

Intramural Sports

scheduled competitive activities offering

- team, individual, and meet sports for students, faculty, and staff
- over 50 different intramural activities for men, women, and co-rec competition

Fitness Services

programming designed to promote health and wellness

- group fitness sessions offering a wide variety of formats such as cardio, yoga, and cycling
- personal trainers providing fitness assessments, and exercise program planning
- educational outreach presentations/workshops

Climbing/bouldering Area

providing a variety of ever changing climbing routes ranging from beginner to advanced

- 40-ft rock wall with 11 top ropes
- 12-ft freestanding boulder

K-State Challenge Course

team building, experiential activities available by reservation to K-State students and organizations, as well as the Manhattan community offering:

- low elements consisting of ropes, wires, poles and other wooden objects
- high elements using ropes and belay systems providing activities 30-40 feet in the air

Student Employment

Positions for sports officials, building supervisors, weight room supervisors, climbing wall instructors, group fitness leaders, personal trainers, facilitators, maintenance, and office assistants.

Additional information and a complete schedule of hours and events is available on the Recreational Services home page.

Student Access Center

Jason Maseberg Tomlinson, Director

202 Holton Hall

785-532-6441

Fax: 785-532-6457

VP: 785-370-0431

E-mail: accesscenter@k-state.edu

www.k-state.edu/accesscenter/

Student Access Center appreciates disability as an integral part of the K-State experience. We are dedicated to providing equal educational opportunity and access to students by providing a broad range of services to meet the needs of students with disabilities.

Students may require accommodations in areas such as attention, autism, learning, mobility, medical, psychological, and sensory. Services provided may include adaptive technology, alternative text, note-taking, sign-language interpreters, residential life, and test-taking. Literacy software, called Read and Write Gold, is available to all students and includes features such as text-to-speech, scanning, and a read-aloud dictionary.

Through collaboration and support of the entire campus community, the Access Center promotes disability pride, program accessibility, and universal design principles so that everyone has full access to university life.

Union Program Council

Union Program Council (UPC), K-State's premier student-led event planning organization, provides entertainment to the K-State community and an opportunity for students to gain leadership skills. UPC plans more than 100 programs each year for students by students. UPC's student volunteers determine the big campus entertainment act for the year, plan social events to build community, choose the art exhibited in the William T. Kemper Art Gallery, expose you to different cultures with their multicultural programming and organize a substance-free **After Hours** event Friday nights during the semester.

All students are encouraged to get involved with UPC. Students who want to get involved should contact **UPC** on the web, by phone 785-532-6571, or follow them on Instagram.

The Union is also the home of many student offices: the Student Governing Association (SGA), Student Programs and Involvement (SPI), Fraternity and Sorority Life Office (FSL), Military Affiliated Resource Center (MARC), Union Program Council (UPC), Union Governing Board (UGB), and the campus radio station, Wildcat 91.9.

Student Government

E-mail: sga@k-state.edu

www.k-state.edu/sga

The purpose of the Student Governing Association is to help students voice concerns, suggestions, or grievances. Every student is a member of SGA and is represented by student senators from their college, and by the student body president and vice president. The student senators, student body president, and vice president are elected by the K-State student body.

SGA is divided into three branches: legislative, judicial, and executive. Student Senate makes up the legislative branch. It is composed of standing committees including funding allocations committees; student services fee; and senate operations.

The judicial branch is composed of the judicial council, student review board, student tribunal, and the parking citations appeals board.

The student body president, vice president, and cabinet make up the executive branch. The president has the responsibility to promote the general welfare of the students and acts as the official voice of the student body to the faculty, administration, and public.

Upward Bound Program

Upward Bound at K-State Salina Campus

Upward Bound K-State Salina Campus
2310 Centennial Road
785-826-2640
www.salina.k-state.edu/upwardbound

Upward Bound is a federally funded campus-based TRIO program designed to assist low income and underrepresented students with college potential who need additional academic preparation, advisement, and encouragement to succeed in high school and later, in college. The Upward Bound program participants are involved in the program from the time they are selected for participation until they graduate from high school. The program offers a six-week summer residential component and academic advising sessions during the academic year.

The mission of the Upward Bound program at K-State Salina is to promote enrollment and persistence in post-secondary education for program participants and their families by providing academic, social and emotional support. The Salina Upward Bound program serves students from Ell-Saline, Clay Center, Lincoln, and Newton high schools.

Support Services

Early Childhood Laboratory

1701 N. Manhattan Avenue
785-532-2226
Fax: 785-532-3537
E-mail: stonehouse@k-state.edu
<https://www.hhs.k-state.edu/stonehouse/lab/>

The Early Childhood Laboratory, located at the Hoeftin Stone House Early Childhood Education Center, houses a part-day preschool classroom and is sponsored by the School of Family Studies. The Early Childhood Laboratory is licensed by the state and is accredited by the National Academy of Early Childhood Programs. The children enrolled in the program range in age from three to five years. Children who are eligible by age to enter kindergarten are not eligible for enrollment in the program. The group is balanced by age and sex of the children. Within these guidelines, children are accepted by date of application. The total group size is 15 children. The half-day preschool sessions are operated Monday through Thursday, 8:30 - 11:30 a.m.

K-State Family Center

139 Campus Creek Complex
785-532-6984
Fax: 785-532-6523
E-mail: family@k-state.edu
www.ks.k-state.edu/familycenter

The K-State Family Center is the marriage and family therapy clinic housed in the Campus Creek Complex. The Center provides applied educational training to students while offering counseling, family-related educational programs, consultation and mediation services for Manhattan and the surrounding communities. MFT faculty, doctoral and masters interns staff the Family Center providing individual, couple, family and group therapy for a range of mental health and family related issues. The Center uses a sliding fee scale making services affordable for all economic ranges. Appointments are available Monday through Thursday from 8am-9pm and on Fridays from 8am-5pm. The Family Center is also home to the state sponsored home-based family therapy training project providing training on home-based family therapy for clinicians throughout the state of Kansas. This training is sponsored through a contract with KDAD's.

Hoeflin Stone House Early Childhood Education Center

1701 N. Manhattan Ave
785-532-3537
E-mail: stonehouse@k-state.edu
www.ks.k-state.edu/stonehouse

The Hoeflin Stone House Early Childhood Education Center is located on the north side of campus at 1701 North Manhattan Avenue. The two-story house and architect-designed playgrounds support the development of young children from six weeks to 5 years of age. Children who are eligible by age to enter kindergarten are not eligible for the program. Eight children are enrolled in the infant room. The toddler group accommodates 10 children. Thirty children are enrolled in the preschool group. The groups are balanced by sex and age of the children. Priority is given to children whose parents work full time. Within these guidelines, children are accepted by date of application. The center is available only for full-day enrollments, five days a week. The hours are 7:30 a.m. to 5:30 p.m., and the center is open for most of the year, with the exception of university holidays, three weeks in August, and two weeks at the end of December. The Hoeflin Stone House Early Childhood Education Center is licensed by the state and is accredited by the National Academy of Early Childhood Programs.

Other Research Facilities and Equipment

A variety of specialized facilities is maintained to support research and scholarly work in the humanities, natural sciences, applied sciences, social sciences, and professional areas. Although an exhaustive listing is prohibitive, the following list represents a selection of supporting resources:

- Aquatic and terrestrial research laboratories
- Arp electronic music synthesizer
- Audiovisual materials center
- Center for Excellence in Computer-Controlled Automation
- Center for Extended Services and Studies

- Computer-Aided Design Laboratories
- Consortium for Political Research data banks
- Controlled environment test facility
- Editorial offices of major journals
- Experimental animal facilities
- Financial Therapy Clinic
- Fourier transform spectroscopic laboratory
- Glassblowing and instrument shops
- Greenhouses
- Heliodon and wind tunnel
- Herbarium and monographic library
- Insect reference collection
- Interior architectural shops
- Marriage and Family Therapy Clinic
- Near infrared protein laboratory
- Nuclear magnetic resonance spectrometers
- Physiology of exercise laboratory
- Plant disease diagnostic laboratory
- Population and demographic laboratory
- Recording Raman spectrometer
- Scanning electron microscope
- Soil testing laboratory
- Speech and Hearing Center
- Statistical laboratory
- Textile chemistry laboratory
- Textile conservation laboratory
- Transmission electron microscope
- Veterinary diagnostic laboratory
- Weather data laboratory
- Wind and soil erosion laboratory
- X-ray diffractometers

Scholarly and Professional Publications

College of Architecture and Design Newsletter of the Rural/Small Town Planning Division, American Planning Association-information, articles, and essays on the nature of rural/small town planning. OZ, modern architectural trends.Environmental and Architectural Phenomenology Newsletter, information and features on environmental design as place making.

College of Education Educational Considerations, timely papers on educational issues at all levels. Media Adult Learning, research, reviews, papers.

College of Engineering Kansas State Engineer, technical and nontechnical articles on engineering developments. Research Activities, biennial report on research in the College of Engineering.

College of Veterinary Medicine Veterinary and Human Toxicology, toxicology, research, reviews, and field observation.

Continuing Education National Issues in Higher Education, proceedings of annual meetings on educational issues. IDEA Papers, series on college teaching, from the Center for Faculty Evaluation and Development.

Cooperative Agricultural Extension Numerous publications about research, in varied formats for various audiences.

Department of English Literary Magazine Review, reviews of literary magazines and commentary on the international noncommercial literary magazine scene. Touchstone, student literary magazine. The Spenser Newsletter, the official publication of the Spenser Society.

Department of History Journal of the West, history and culture of the U.S. West.

Department of Modern Languages Studies in Twentieth Century Literature, literary theory and practical criticism of 20th-century literature in French, German, Russian, and Spanish (with University of Nebraska, Lincoln).

Libraries Bibliography Series, each bibliography on a different topic.

University Press of Kansas

Charles Myers, Director
2502 Westbrooke Circle
Lawrence, Kansas 66045-4444
785-864-4154
785-864-4586 Fax
E-mail: upress@ku.edu
www.kansaspress.ku.edu

Kansas State University, in association with the other five Regents universities, operates and supports the University Press of Kansas for the purpose of publishing scholarly and regional books on a nonprofit basis. K-State joined the consortium in 1967 when the press was officially reorganized by the Kansas Board of Regents. Until mid-1982, the operation was known as the Regents Press of Kansas.

The University Press of Kansas is the first American university press to operate as a statewide consortium under the specific sponsorship of all the state's universities. A member of the Association of American University Presses since its founding in 1946, the press has published over 1400 titles, with more than 975 currently in print. Its ongoing American Presidency Series, with 35 titles issued to date, has been praised as one of the most interesting and rewarding historical series in this country.

The press is governed by a board of trustees, who are the chief academic officers of the sponsoring institutions and who appoint two members and two alternates from each faculty to serve on the advisory editorial committee.

Graduate School Admission

- Admission Categories
- Admission Procedures
- Entrance Requirements
- Graduate Assistants
- Graduate Study by Seniors and Undergrad Special Students
- Graduate Work by Faculty and Staff
- Registration and Enrollment
- Standardized Tests

For more information please contact:

Kansas State University
Graduate School
119 Eisenhower Hall
Manhattan, KS 66506-1103
Voice: (785) 532-6191 or (800) 651-1816
Fax: (785) 532-2983
www.k-state.edu/grad
grad@ksu.edu

Auxiliary Services and Facilities

Note: All addresses are in Manhattan, unless otherwise noted.

Office of Institutional Equity

103 Edwards Hall
785-532-6220
E-mail: equity@k-state.edu
www.k-state.edu/oie

The Office of Institutional Equity is available to students on matters of equal opportunity in admissions, access to University sponsored programs and activities, and employment due to race, color, ethnic or national origin, sex, sexual violence, sexual orientation, gender identity, religion, age, ancestry, disability, military status, veteran status, dating or domestic violence, or stalking. Students with concerns about any of the basis listed above may contact the office. The Office of Institutional Equity also includes the University's Title IX Coordinator and investigation team. These individuals are available to assist in coordinating support and services to students in need of assistance after experiencing any form of discrimination, harassment, sexual violence, stalking, or relationship violence.

Alumni Association

Amy Button Renz, President and CEO
K-State Alumni Association
1720 Alumni Center
785-532-6260 or 1-800-600-2586
E-mail: alumni@k-state.com
www.k-state.com

The K-State Alumni Association is a 41,000-member, nonprofit organization whose mission is to lead and inspire lifelong involvement that will benefit Kansas State University and all members of our Wildcats Community. This is accomplished through student recruitment programs, quality publications and communications, constituent events, affinity programs and maintenance of records on more than 320,000 alumni and friends.

Child Care

K-State Center for Child Development

Debra Ring, Director
1 East Jardine Drive
785-532-3700
E-mail: childcare@k-state.edu
www.k-state.edu/ksucdc

The K-State Center for Child Development is a Student Life department serving the child care and early childhood education needs of K-State students, faculty, staff and the community. It is fully licensed by the Kansas Department of Health and Environment and is a nationally accredited program through NAFYC. It is professionally staffed and uses a nationally acclaimed curriculum. The Center also partners with Army Childcare in Your Neighborhood to offer subsidies to military families. The Center provides a variety of subsidies to make childcare affordable to all families. The Center offers full-day high quality and educational programs for infants through school age (6 weeks through 5th grade). The Center is open year-round offering care Monday through Friday from 7 a.m. to 5:30 p.m.

School of Family Studies and Human Services

Dr. Dorothy Bagwell Durband, School Director
Dr. Mary DeLuccie, Administrator of Early Childhood Programs
303 Justin Hall
785-532-5510
Fax: 785-532-5505
E-mail: fshs@k-state.edu
www.he.k-state.edu/fshs

The School operates six early childhood classrooms for children aged 6 weeks through five years at The Stone House Ruth Hoeflin Early Childhood Education Center and C.Q. and Georgia Chandler III Institute for Child and Family Studies on N. Manhattan Avenue. The site serves as a teacher training facility for students enrolled in the pre-service early childhood education program. Enrollment in the program is open to members of the K-State and Manhattan communities. The facility is licensed by the state of Kansas and accredited by the National Association for the Education of Young Children. The learning environments and planned experiences are designed to foster children's cognitive, language, social, emotional, and physical growth and development. Enrollment application forms are available online.

Four of the classrooms provide year-round, full-day care and education for the children ranging in age from 6 weeks through five years of age. Priority in enrollment is given to children of parents working full-time. Two classrooms, The Early Childhood Laboratory, host an interagency program with USD 383. The classrooms integrate children identified by USD 383 who have delays and/or disabilities with non-handicapped children. Forty-eight children, ranging in age from 3 to 5 years, are enrolled in this part-year, part-day preschool program.

K-State Family Center

Nancy T. O'Conner, Director Marriage and Family Therapy Clinic
139 Campus Creek Complex
785-532-6984
Fax: 785-532-6523
E-mail: family@k-state.edu
www.he.k-state.edu/familycenter

The K-State Family Center provides applied educational training to students while offering counseling, family-related educational programs, consultation, and mediation services to Manhattan and the state. On-site services include individual,

couple, family and group therapy, and parent education. Outreach programs include contracts with Junction City Smart Start program providing home-based family play therapy, parent education and staff consultation. State sponsored home-based family therapy training is also provided for clinicians throughout the state through contracts with SRS and KHS.

Communications and Marketing

Jeffery B. Morris, Vice President for Communications and Marketing
128 Dole Hall
785-532-2535
Fax: 785-532-7355
E-mail: jbmorris@k-state.edu

The Division of Communications and Marketing has a mission to fully integrate our university image and message delivery; to increase the impact and efficiency of institutional and marketing objectives; and to unify the brand voice in order to continue K-State on the path to an improved state, national, and international reputation. The division is charged with creating and leading a comprehensive communications and integrated marketing program that emphasizes Kansas State University's unique brand and enhances the visibility of the university.

Marketing Services

Ashley N. Martin, Director
128 Dole Hall
785-532-2535
Fax: 785-532-7355
E-mail: ashley07@k-state.edu
www.k-state.edu/marketing

The University Marketing provides all administrative units, academic colleges and departments, and university-sponsored organizations and initiatives with direct access to integrated marketing expertise, free of charge. The marketing team consults on and develops marketing strategies that are both university-wide and unit-specific, and we specialize in creative copy writing that is tailored to your marketing needs. Our team of client managers serves as your first point of contact to access all of the free creative services the division offers. The marketing staff coordinates with the division's graphic designers, Web services, video and engineering services, news and communications services, photographers, and social media staff to create and deliver your message.

News and Communications Services

Cindy Hollingsworth, Director
128 Dole Hall
785-532-2535
Fax: 785-532-7355
E-mail: cholling@k-state.edu
media@k-state.edu
socialmedia@k-state.edu
www.k-state.edu/media

News and Communications Services coordinates public information about K-State faculty, staff and student activities and events. It is the official outlet for print and broadcast news materials relating to K-State policies and administration and is one of three university units sanctioned to distribute news. The unit administers the general university social media accounts and offers editing and writing assistance to university colleges, departments and units. Additionally, News and Communications Services

produces and distributes video news releases and distributes the official daily newsletters, *K-State Today*, for faculty and staff, and *K-State Today Student Edition*. The unit also works in conjunction with the Vice President for Research to publish the university's flagship research magazine, *Seek*.

Photographic Services

Tommy Theis, Photographic Services Manager
128 Dole Hall
785-532-2535
Fax: 785-532-7355
E-mail: photo@k-state.edu
www.k-state.edu/photo

Photographic Services offers location and studio photography. We offer walk-in portrait days twice monthly.

Design Services

Ben Cleveland, Creative Director
128 Dole Hall
785-532-2535
Fax: 785-532-7355
E-mail: abclevel@k-state.edu
<http://www.k-state.edu/design>

Design Services is responsible for designing and coordinating production for print and Web projects used in the advancement of Kansas State University.

Video and Engineering Services

Robert F. Nelson, Executive Director
128 Dole Hall
785-532-2535
Fax: 785-532-7355
E-mail: ves@k-state.edu
www.k-state.edu/video

Video and Engineering Services offer a full-service production facility with skilled broadcast and production professionals ready to assist you with studio, remote, or other video production needs. Facilities include a professional broadcast studio, remote production truck and digital satellite uplink vehicle. Producers, directors, and engineers will work with you to turn your idea into a product you'll be proud to share. From pre-production to post-production, Video and Engineering Services is your "one-stop shop" for audio and video production for all of your marketing and professional needs.

Web Services

Neil Erdwien, Director
128 Dole Hall
785-532-2535
Fax: 785-532-7355
Email: webservices@k-state.edu
www.k-state.edu/webservices

Web services promotes a consistent, positive image of K-State by managing the university's Web presence and overseeing K-State's content management system. Services include Web design, information architecture, multimedia content, user experience research and email marketing.

Division of Information Technology

IT Help Desk
Kansas State University
Hale Library
2nd Floor
117 Mid-Campus Dr. North
Manhattan, KS 66506

785-532-7722
800-865-6143
helpdesk@k-state.edu
www.k-state.edu/its

The university provides technology resources and facilities for student, faculty, and staff use. K-State's high-speed data network allows access from residence halls, the K-State Student Union, Hale Library, university computing labs, centrally scheduled classrooms, and locations equipped with wireless access points.

To learn about information technology at K-State, visit the [Welcome to Information Technology at K-State website](#).

For questions or assistance with any information technology resources, contact the IT Help Desk:

- Email: helpdesk@k-state.edu
- Phone: 785-532-7722
- Website: IT Help Desk

Responsible use of the university's technology resources is expected of everyone and use of K-State's systems constitutes agreement to abide by all relevant policies. Unauthorized or inappropriate use may limit or revoke use privileges and administrative, civil, or criminal penalties. For more information, visit the [Information Technology Usage Policy](#).

eIDs and passwords

All K-State students and employees are required to have an eID (electronic identifier). Your eID is your K-State user name and becomes part of your K-State email, is used to enroll in classes, access Canvas, and KSIS, view online paychecks, and much more.

With your eID, you can also manage your eProfile to change your password, sign up for K-State Alerts emergency messages and phone calls, and more.

Your eID's security is your responsibility. Keep your eID password private. K-State policy prohibits using someone else's eID or sharing passwords. Your eID password does not expire. You do not need to change your password unless the password becomes compromised. Visit the [K-State eID and password page](#).

K-State will never ask for your password in an email. Delete any email that asks for your password.

Email

K-State provides email service to all students and employees. Your official, primary K-State email address has two forms: eid@k-state.edu and eid@ksu.edu. The university sends official correspondence to K-Staters via their primary email address with the full expectation that communications will be received and read in a timely manner.

For information about the central email services offered at K-State, visit the Office 365 website.

Microsoft Office software

Office 365 is free for all K-Staters and includes desktop and mobile app versions of the Microsoft Office Suite and can be installed on up to five PCs or Macs, five tablets, and five phones. For help and support with Office 365, visit the Office 365 Help and Support website.

Antivirus and security

K-Staters connecting their computers to the Kansas State University network can use the approved antivirus software of their choice or choose from the recommended software listed on the K-State Antivirus Software website.

Emergency notices (K-State Alerts)

K-State Alerts is Kansas State University's emergency notification system that gives campus authorities the ability to communicate emergency information quickly to the university community. To sign up, visit eid.k-state.edu.

Computing

Windows and Mac computer stations are available in Hale Library (Windows on 1st and 2nd floors, Macs on 2nd floor) and the K-State Student Union. There are two lab computers in the Cardwell Math/Physics Library. One of the computers is located in the corridor (Cardwell 105C). Mac computers in Hale Library include Adobe Creative Cloud. Computer labs provide free access to electronic information resources and software programs, including email, internet access, word processing, spreadsheets, databases, statistical analysis, and programming languages.

To locate public computers and to print on campus and learn more, visit the University Computing Labs website.

Media Studio

The Media Studio is located on the first floor of the Sunderland Foundation Innovation Lab in Hale Library. To learn more, visit the Media Studio website.

Equipment checkout

Equipment available for checkout varies. For up-to-date information, do one of the following:

- Call: 785-532-4918
- Email: itcheckout@k-state.edu
- Visit the website: Equipment Checkout

Connecting to K-State (wireless and direct network)

The wireless networks include KSU Wireless, KSU Guest, and KSU Housing (for individuals living in the residence halls and Jardine Apartments). Eduroam also is available. For more information, visit the Wireless Networks website.

There are two ways to connect to the campus data network and then to the internet:

1. **Direct network connection, using a hard-wired line and an Ethernet card.** K-State buildings are directly connected to the internet.
2. **Wireless network connection.** K-State's wireless computer network allows laptops and other mobile computing devices to link to the internet without being physically tied to an Ethernet connection line.

A current K-State eID and password are required to configure your device and access the secure wireless network. For more information, visit the Wireless Connect web page.

Information resources

Information resources include:

- KSIS (the student information system)
- Canvas (learning management system)
- K-State Libraries' catalog system
- K-State Research Exchange (K-REx) institutional repository
- Software
- and more.

For links to the many IT resources, visit the IT Services website.

Electronic Theses, Dissertations, and Reports

Graduate students are required to submit an electronic version of their thesis, dissertation, or report. Information on formatting, templates, help and support and more are available from the ETDR website.

Chief Information Officer and Vice President

Gary Pratt, Chief Information Officer

116 Unger Complex

2323 Anderson Ave.

785-532-6520

E-mail: its@k-state.edu

www.k-state.edu/it

https://catalog.k-state.edu/content.php?catoid=44&navoid=8020#info_tech_services

KSU Foundation

Greg Willems, President and CEO

1800 Kimball Avenue, Suite 200

785-532-6266

E-mail: foundation@found.k-state.edu

www.found.k-state.edu

The KSU Foundation was established in 1944 as the official fundraising arm of Kansas State University. It is a separate, independent organization chartered by the state of Kansas as a 501(c)(3) nonprofit educational corporation. Gifts to the foundation are tax-deductible to the full extent of the law.

Foundation staff members work in close partnership with university administrators, deans and faculty to secure charitable contributions from individuals, corporations and foundations to support identified priorities for the university. Gifts received through the foundation fund undergraduate and graduate student scholarships, establish faculty chairs and professorships, provide departmental support, and enhance the campus infrastructure.

A volunteer board of trustees governs the foundation. A 15-member board of directors meets quarterly and is authorized to act on the trustees' behalf.

K-State Speech and Hearing Center

Robert Garcia, Program Director
Melanie Hilgers, Director of Clinical Services
139 Campus Creek Complex
785-532-6879
E-mail: mhilgers@k-state.edu
www.he.k-state.edu/speech/

The K-State Speech and Hearing Center provides evaluation, intervention, and consultation services to individuals with articulation, fluency, voice, language and swallowing, or hearing impairments. These clinical services are available to university students, children, and adults of the surrounding communities. The center provides educational and clinical experiences for students preparing for careers in speech-language pathology and audiology.

Libraries

K-State Libraries
Lori Goetsch, Dean of Libraries
Hale Library
785-532-3014
E-mail: library@k-state.edu
www.lib.k-state.edu

On May 22, 2018, a fire in Hale Library resulted in significant smoke and water damage. While the building will be closed for the 2018-2019 school year, library and IT services are available, including Ask a Librarian and the IT Help Desk, which is located in the Student Union. Online resources such as databases, ebooks, and journals are available, but most physical collections that were in Hale during the fire will not be accessible during the 2018-2019 school year. Students should request books and articles that are no longer available from K-State using the Library's free inter-library loan service. They will work to get these items from other libraries for you. Alternate computer, printing, and study locations have also been identified. For more information about the fire and alternate study locations, visit the Hale Library Recovery website at www.k-state.edu/hale.

K-State Libraries manifests the land-grant values and rich history of Kansas State University. We elevate academic success as an integral partner in research, learning, and discovery. We advocate for our campus and our community, connect their imaginations to information, and number their successes among our own.

All of the K-State Libraries venues offer areas for individual and group study and often include technology-enabled meeting rooms. Inside Hale Library, the Great Room anchors the third floor Quiet Zone for focused individual work, while the area around Library Help on the second floor is a hub of activity for group projects and study.

When classes are in session, Hale Library is open 24 hours a day, 5 days a week, plus weekend hours. This ensures that whenever students need a place to study, the Libraries can be a first option. Additionally, the Anita C. Lehner 24 Hour Study Area inside Hale Library is open 365 days a year for study space or computer use.

The Libraries employ approximately 100 staff full-time, including faculty librarians, unclassified professionals, and classified professionals. The part-time student staff numbers approximately 60.

Collectively the Libraries maintain three million volumes to support the diverse academic, instructional, and research activities of Kansas State University. Technology allows students and faculty to be outside the library building, off campus, and even out of the country and still have the ability to access online databases, journals, and books. Personal research assistance is available from anywhere through the Libraries' website and services like Ask a Librarian that include chat, text message, and email options. We've been answering your questions since 1863 and finding new ways to do so every day.

In addition to Hale Library, there are five specialized branch libraries: Fiedler Engineering Library, Math/Physics Library, K-State Polytechnic Campus Library, Veterinary Medical Library, and Paul Weigel Library of Architecture, Planning and Design.

K-State Libraries: Elevating Academic Success!

Police Department

108 Edwards Hall
785-532-6412
E-mail: police@k-state.edu
www.k-state.edu/police

LiveSafe

The Kansas State University Police Department helps preserve a safe campus environment where diverse social, cultural and academic values are allowed to develop and prosper.

The department has 23 police officers serving the campus community. Patrols operate 24 hours a day, seven days a week, 365 days a year through the campus, KSU Foundation property, parking lots, residence halls, Jardine apartments and athletic complex grounds.

University police officers derive their authority from KSA 76-726 and are fully commissioned law enforcement officers vested with full police/law enforcement authority with arrest powers. Officers are state-certified and receive their basic law enforcement training from the Kansas Law Enforcement Training Academy. Officers receive a minimum of 40 hours of in-service training each year to maintain their state certification.

24 hour services include Multi-Media Messaging (similar to Text to 9-1-1) through LiveSafe, K-State Alerts, and Wildcat Walk (escort across campus). Additional services provided upon request include ALICE training, Community Safety Talks, and Emergency Operations Planning. Fingerprinting is offered during limited hours.

Postal Service

Contract Post Office

113 Dykstra Hall

785-532-6306 (messages only, clerk will return call)

www.k-state.edu/facilities/operations/cms/ContactractPostOffice.html

Central Mail Services

109 Dykstra Hall

785-532-7751 (distribution of all interdepartmental mail and metering of departmental outgoing mail)

E-mail: centralmailservices@k-state.edu

www.k-state.edu/facilities/operations/cms/

All mail for students must be addressed to their off-campus Manhattan address or residence hall/Greek address. Postage should be applied to this mail, and it should be sent through the United States Postal Service.

Manhattan Post Office personnel deliver U.S. mail directly to university buildings and residence halls and pick up outgoing U.S. mail from various locations on the campus.

The Contract Post Office sells stamps, and other postal supplies; weighs, insures, and registers mail; and receives outgoing U.S. mail.

Collegian Media Group

Stephen Wolgast, Director

103 Kedzie Hall

785-370-6355

E-mail: swolgast@collegianmedia.com

www.kstatecollegian.com

K-State students of all majors produce the *Kansas State Collegian* daily newspaper and *Royal Purple* yearbook the nation's most honored tandem of collegiate publications.

Student journalists produce and select all content in the *Collegian* and *Royal Purple*. Their experience as reporters, photojournalists, designers, graphics journalists, illustrators, copy editors, and editors launches them into internships and careers across the nation. A student staff also sells thousands of dollars in advertising to help underwrite the publications.

Collegian Media Group is an independent local agency that publishes the newspaper, yearbook, and Manhappenin' magazine. Its board of directors hires editors in chief and supervises finances, but content decisions rest with the student staffs of the publications. The newspaper advisor also teaches in the A.Q. Miller School of Journalism and Mass Communications.

Royal Purple staffs are hired annually. *Collegian* staffs are hired by semester. Staff applications are available in 103 Kedzie Hall, with applications due in early November and early March for subsequent semesters.

University Press of Kansas

Charles Myers, Director

2502 Westbrooke Circle

Lawrence, Kansas 66045-4444

785-864-4154

E-mail: upress@ku.edu
www.kansaspress.ku.edu

Kansas State University, in association with the other five Regents' universities, operates and supports the University Press of Kansas for the purpose of publishing scholarly and regional books on a nonprofit basis. The press is governed by a board of trustees composed of the chief academic officers of the sponsoring institutions.

K-State Athletics

Gene Taylor, Director of Athletics
E-mail: kstatead@kstatesports.com
www.k-statesports.com

Head Coaches: Dibbini, S. L. Fritz, Godfrey, Hughes, Klieman, Knight, Mittie, Robbins, Rovelto, Jordan Smith, Sweeney, and Weber

Associate Head Coaches: Grove, Lowery, Ostermann, and S. Snyder

Assistant Coaches: Carr, Coleman, DeMars, Dickey, Dykmann, Fabris, Frazier, Garrett, Hanson, Helin, Hickson, Johnson, Klien, Korn, Kurey, Latimore, Norwood, Ott, Romo, Seiler, Jessica Smith, Sorensen, Stone, Taylor, Wates, and Wiltfong

Senior Administrative Staff: Babock, Garrett, Lannou, McCowan, Niederwerder, Scott, Shields, Shubert, Thomas, and Waller

Athletics Trainers: Burris, Davis, Fabrizio, Fitzgerald, Harvey, Henderson, Hoffman, Kienstra, LeMair, Sauber, Seiler, Thomason (Head Trainer), E. Trausch, Trausch (Sports Dietitian, nutritionist), and Weese

Athletic Communications: Brown, Gilbert, Kutz, Lackey, Lannou (Director), McCarty, Moline, and Peterson

Strength and Conditioning Coaches: Allen, Cavender, Cyr, Dawson (Director), Honeycutt, Kloss, Meredith, O'Donnel, Rapp, and Ryan

K-State is a member of the Big 12 Conference and through that affiliation competes with Baylor University, Iowa State University, the University of Kansas, the University of Oklahoma, Oklahoma State University, the University of Texas, Texas Christian University, Texas Tech University, and West Virginia University.

Intercollegiate competition is open to all students and is coached by staff members who are specialists in their fields.

The men's intercollegiate program competes in football, basketball, baseball, track (indoor and outdoor), cross country, and golf. The women's program offers competition in cross country, volleyball, basketball, track (indoor and outdoor), tennis, golf, crew, and soccer.

Athletics courses

The following courses may be repeated for credit.

Course	Course Title	Credit Hours	When Offered	Pre-Requisites
ATHM 101	Varsity Baseball	1	Fall, Spring	Prerequisite: Consent of instructor
ATHM 102	Varsity Basketball	1	Fall, Spring	Prerequisite: Consent of instructor
ATHM 104	Varsity Football	1	Fall, Spring	Prerequisite: Consent of instructor
ATHM 105	Varsity Golf	1	Fall, Spring	Prerequisite: Consent of instructor

ATHM 108	Varsity Track	1	Fall, Spring	Prerequisite: Consent of instructor
ATHW 150	Intercollegiate Basketball	1	Fall, Spring	Prerequisite: Consent of instructor
ATHW 152	Intercollegiate Track	1	Fall, Spring	Prerequisite: Consent of instructor
ATHW 154	Intercollegiate Tennis	1	Spring	Prerequisite: Consent of instructor
ATHW 155	Intercollegiate Volleyball	1	Fall	Prerequisite: Consent of instructor
ATHW 156	Intercollegiate Crew	1	Fall, Spring	Prerequisite: Consent of instructor
ATHW 157	Intercollegiate Golf	1	Fall, Spring	Prerequisite: Consent of instructor
ATHW 158	Intercollegiate Soccer	1	Fall, Spring	Prerequisite: Consent of instructor