Minutes of the Graduate Council  
September 5th, 2017 - 3:30 p.m.  
Big 12 room, KSU Student Union


Graduate Student Council: D. Lawson  
Graduate School: C. Shanklin, G. Craig, M. Herman, S. Schlender, and K. Taylor

1. President’s Cabinet Open Forum with Graduate Faculty  
3:30-5 pm in the Big 12 room, Union  
The Graduate Council Meeting was held concurrently with the Graduate Faculty Open Forum to allow Council members the opportunity to interact with Provost Mason and Vice President Bontrager.

All action items were presented as a Consent Agenda. Motion passed and all action items were approved.

2. Minutes of the May 2nd, 2017 meeting:  
http://www.k-state.edu/grad/faculty/graduate-council/agendaminutes/2017_5%20min.pdf

3. Graduate School Actions and Announcements

### Non-Graduate Faculty to Teach Graduate Courses

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION</th>
<th>DEPARTMENT/PROGRAM</th>
<th>DATE APPROVED BY GRAD SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Busk</td>
<td>Instructor</td>
<td>School of Family Studies and Human Services</td>
<td>7/31/2017</td>
</tr>
<tr>
<td>Brooke Cull</td>
<td>Instructor</td>
<td>Food, Nutrition, Dietetics and Health</td>
<td>8/4/2017</td>
</tr>
<tr>
<td>Fariba Fateh</td>
<td>Assistant Professor</td>
<td>Electrical and Computer Engineering</td>
<td>6/27/2017</td>
</tr>
<tr>
<td>Rob Fisher</td>
<td>Instructor</td>
<td>Special Education, Counseling, and Student Affairs</td>
<td>5/27/2017</td>
</tr>
<tr>
<td>Christina Glenn</td>
<td>Adjunct Instructor</td>
<td>School of Family Studies and Human Services</td>
<td>4/27/2017</td>
</tr>
<tr>
<td>Dan Larson</td>
<td>Instructor</td>
<td>Special Education, Counseling, and Student Affairs</td>
<td>8/4/2017</td>
</tr>
<tr>
<td>Chandra Lasley</td>
<td>Instructor</td>
<td>School of Family Studies and Human Services</td>
<td>8/10/2017</td>
</tr>
<tr>
<td>Linda Leitz</td>
<td>Instructor</td>
<td>School of Family Studies and Human Services</td>
<td>7/6/2017</td>
</tr>
<tr>
<td>Kim Richards</td>
<td>Adjunct Instructor</td>
<td>Management</td>
<td>7/27/2017</td>
</tr>
</tbody>
</table>

### Membership Approvals

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION</th>
<th>DEPARTMENT/PROGRAM</th>
<th>DATE APPROVED BY GRAD SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>George Amariucai</td>
<td>Associate Professor</td>
<td>Computer Science</td>
<td>5/18/2017</td>
</tr>
<tr>
<td>Cornelia Caragea</td>
<td>Associate Professor</td>
<td>Computer Science</td>
<td>6/12/2017</td>
</tr>
<tr>
<td>Raluca Cozma</td>
<td>Associate Professor</td>
<td>Journalism &amp; Mass Communications</td>
<td>8/4/2017</td>
</tr>
<tr>
<td>Jeongdae Im</td>
<td>Assistant Professor</td>
<td>Civil Engineering</td>
<td>6/21/2017</td>
</tr>
<tr>
<td>NAME</td>
<td>POSITION</td>
<td>DEPARTMENT/PROGRAM</td>
<td>GRADUATE FACULTY TYPE</td>
</tr>
<tr>
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<td>-----------------------</td>
</tr>
<tr>
<td>Christopher Jones</td>
<td>Associate Professor</td>
<td>Civil Engineering</td>
<td>6/28/2017</td>
</tr>
<tr>
<td>Isabel Millan</td>
<td>Assistant Professor</td>
<td>American Ethnic Studies</td>
<td>4/27/2017</td>
</tr>
<tr>
<td>Arslan Munir</td>
<td>Assistant Professor</td>
<td>Computer Science</td>
<td>5/18/2017</td>
</tr>
<tr>
<td>Danielle Myers</td>
<td>Assistant Professor</td>
<td>Journalism &amp; Mass Communications</td>
<td>8/4/2017</td>
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<tr>
<td>Chad B. Paulk</td>
<td>Assistant Professor</td>
<td>Grain Science and Industry</td>
<td>5/18/2017</td>
</tr>
<tr>
<td>April Petillo</td>
<td>Assistant Professor</td>
<td>American Ethnic Studies</td>
<td>4/27/2017</td>
</tr>
<tr>
<td>Nora Springer</td>
<td>Assistant Professor</td>
<td>Diagnostic Medicine/ Pathobiology</td>
<td>8/9/2017</td>
</tr>
<tr>
<td>Brian Tande</td>
<td>Associate Professor</td>
<td>Chemical Engineering</td>
<td>7/25/2017</td>
</tr>
<tr>
<td>Alec Tefertiller</td>
<td>Assistant Professor</td>
<td>Journalism &amp; Mass Communications</td>
<td>8/4/2017</td>
</tr>
<tr>
<td>Joshua Weese</td>
<td>Instructor</td>
<td>Computer Science</td>
<td>5/18/2017</td>
</tr>
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</table>

4. Graduate Faculty Nominations:

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION</th>
<th>DEPARTMENT/PROGRAM</th>
<th>GRADUATE FACULTY TYPE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>JohnElla Holmes</td>
<td>Assistant Professor</td>
<td>Special Education, Counseling, &amp; Student Affairs</td>
<td>Non-Graduate</td>
<td>4</td>
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<tr>
<td>David Culkin</td>
<td>Adjunct Assistant Professor</td>
<td>Educational Leadership</td>
<td>Graduate Faculty Associate</td>
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<tr>
<td>Bill McCollum</td>
<td>Adjunct Assistant Professor</td>
<td>Educational Leadership</td>
<td>Graduate Faculty Associate</td>
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<tr>
<td>John Persyn</td>
<td>Adjunct Assistant Professor</td>
<td>Educational Leadership</td>
<td>Graduate Faculty Associate</td>
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<tr>
<td>Julie Thiele</td>
<td>Instructor</td>
<td>Curriculum &amp; Instruction</td>
<td>Graduate Faculty Associate</td>
<td>14</td>
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<tr>
<td>Charles Vance</td>
<td>Adjunct Assistant Professor</td>
<td>Educational Leadership</td>
<td>Graduate Faculty Associate</td>
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<tr>
<td>Joanna Kelley</td>
<td>Adjunct Faculty</td>
<td>Biology</td>
<td>Membership</td>
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<tr>
<td>Caryl Y. Lockhart</td>
<td>Research Associate Professor</td>
<td>Diagnostic Medicine/ Pathobiology</td>
<td>Membership</td>
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<tr>
<td>John Dylan Lutter</td>
<td>Clinical Assistant Professor</td>
<td>Clinical Sciences</td>
<td>Membership</td>
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<tr>
<td>Sean P. Montgomery</td>
<td>Adjunct Faculty</td>
<td>Animal Science and Industry</td>
<td>Membership</td>
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<tr>
<td>Thomas N.N. Nortey</td>
<td>Adjunct Faculty</td>
<td>Grain Science and Industry</td>
<td>Membership</td>
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<tr>
<td>Lalitha Peddireddi</td>
<td>Clinical Assistant Professor</td>
<td>Diagnostic Medicine/ Pathobiology</td>
<td>Membership</td>
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<tr>
<td>Christopher D. Reinhardt</td>
<td>Adjunct Faculty</td>
<td>Animal Science and Industry</td>
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<tr>
<td>Jess Sweley</td>
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<td>Grain Science and Industry</td>
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<tr>
<td>Raghavendra Amachawadi</td>
<td>Assistant Professor</td>
<td>Clinical Sciences</td>
<td>Certification</td>
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</tr>
<tr>
<td>George Amariucai</td>
<td>Associate Professor</td>
<td>Computer Science</td>
<td>Certification</td>
<td>51</td>
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<tr>
<td>Cornelia Caragea</td>
<td>Associate Professor</td>
<td>Computer Science</td>
<td>Certification</td>
<td>54</td>
</tr>
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5. Course and curriculum items:

### Expedited Course Changes

<table>
<thead>
<tr>
<th>College</th>
<th>Course Number</th>
<th>Title</th>
<th>Effective Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>CIS 748</td>
<td>Advanced Software Management</td>
<td>Spring 2018</td>
<td>79</td>
</tr>
<tr>
<td>Engineering</td>
<td>CIS 841</td>
<td>Verification and Validation</td>
<td>Spring 2018</td>
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<tr>
<td>Engineering</td>
<td>CIS 895</td>
<td>MSE Project</td>
<td>Spring 2018</td>
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<tr>
<td>Engineering</td>
<td>ECE 643</td>
<td>Computer Engineering</td>
<td>Spring 2018</td>
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<td>Engineering</td>
<td>ECE 694</td>
<td>Optoelectronics</td>
<td>Spring 2018</td>
<td>81</td>
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<tr>
<td>Engineering</td>
<td>ECE 696</td>
<td>Integrated Circuit Design</td>
<td>Spring 2018</td>
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<tr>
<td>Engineering</td>
<td>ECE 773</td>
<td>Bioinstrumentation Design Laboratory</td>
<td>Spring 2018</td>
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<tr>
<td>Engineering</td>
<td>CE 828</td>
<td>Advanced Soil Mechanics</td>
<td>Spring 2018</td>
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<tr>
<td>Veterinary Medicine</td>
<td>DMP 722</td>
<td>Veterinary Virology</td>
<td>Spring 2018</td>
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### Expedited Course Drop

<table>
<thead>
<tr>
<th>College</th>
<th>Course Number</th>
<th>Title</th>
<th>Effective Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>ECE 765</td>
<td>Digital Radio Hardware Design</td>
<td>Spring 2018</td>
<td>83</td>
</tr>
<tr>
<td>Engineering</td>
<td>CS 784</td>
<td>Advanced Soft Tissue Surgery</td>
<td>Spring 2018</td>
<td>84</td>
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<tr>
<td>Engineering</td>
<td>CS 824</td>
<td>Life Long Learning Skills for Professional Students</td>
<td>Spring 2018</td>
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### Expedited Curriculum Changes

<table>
<thead>
<tr>
<th>College</th>
<th>Title</th>
<th>Effective Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>Master of Software Engineering</td>
<td>Spring 2018</td>
<td>84</td>
</tr>
<tr>
<td>Engineering</td>
<td>Computer Science (MS)</td>
<td>Spring 2018</td>
<td>86</td>
</tr>
<tr>
<td>Engineering</td>
<td>Computer Science (Ph.D.)</td>
<td>Spring 2018</td>
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### Non-Expedited New Courses

<table>
<thead>
<tr>
<th>College</th>
<th>Course Number</th>
<th>Title</th>
<th>Effective Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interdisciplinary- Food Science</td>
<td>FDSCI 910</td>
<td>Foodborne Pathogenic Microbiology</td>
<td>Spring 2019</td>
<td>91</td>
</tr>
<tr>
<td>Interdisciplinary- Food Science</td>
<td>FDSCI 805</td>
<td>Food Safety/ Public Health Journal Club</td>
<td>Spring 2018</td>
<td>91</td>
</tr>
<tr>
<td>Veterinary Medicine</td>
<td>DMP 814</td>
<td>Veterinary Bacteriology &amp; Mycology Lecture</td>
<td>Fall 2018</td>
<td>92</td>
</tr>
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</table>
Adjourned: 4:45pm
**Expedited Course Change**  
Computer Science

**From:** 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.

**Prerequisite:** CIS 740. 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

**To:** 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.

**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

**Rationale:** To allow for more flexibility in the M.S.E. Degree program, we want to allow students to take either CIS 740 or CIS 744. Since both meet the requirements as a prerequisite for this core course, we would like to change the prerequisites to allow students to take either CIS 740 or CIS 744.

**Impact:** No impact on other units.

**Effective:** Spring 2018

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**From:** CIS 841 - Verification and Validation, Credits: 3

Practical techniques for verifying and validating software including formal verification, software testing, reliability measurement and modeling.

**Prerequisite:** CIS 740.

**To:** CIS 841 - Verification and Validation, Credits: 3

Practical techniques for verifying and validating software including formal verification, software testing, reliability measurement and modeling.

**Prerequisite:** CIS 740 or CIS 744.

**Rationale:** To allow for more flexibility in the M.S.E. Degree program, we want to allow students to take either CIS 740 or CIS 744. Since both meet the requirements as a prerequisite for this core course, we would like to change the prerequisites to allow students to take either CIS 740 or CIS 744.

**Impact:** No impact on other units.

**Effective:** Spring 2018
From: 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.

Prerequisite: CIS 740, CIS 748, CIS 771, and three additional credits toward the MSE degree.

To: 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.

Prerequisite: CIS 740 or CIS 744, CIS 748, CIS 771, and three additional credits toward the MSE degree.

Rationale: To allow for more flexibility in the M.S.E. Degree program, we want to allow students to take either CIS 740 or CIS 744. Since both meet the requirements as a prerequisite for this core course, we would like to change the prerequisites to allow students to take either CIS 740 or CIS 744.

Impact: No impact on other units.

Effective: Spring 2018

Electrical and Computer Engineering

From: ECE 643 - Computer Engineering Design Lab, Credits: 3

The design and construction of a small computer system using simple programmable devices. The design and construction of computer interfacing systems for PCs based on USB devices and simple microcontroller chips.

Note: Two hours lecture and three hours lab a week.

Prerequisite: CIS 308 or 209; and ECE 441. Prerequisite or concurrent enrollment: ECE 649.

Typically Offered: Fall, Spring

To: ECE 643 - Computer Engineering Design Lab, Credits: 3

Design and construction of simple I/O devices and a small microcomputer system using simple to complex programmable devices.

Note: Two hours lecture and three hours lab a week.

Prerequisite: CIS 308 or 209; and ECE 441. Prerequisite or concurrent enrollment: ECE 649.

Typically Offered: Fall, Spring

Rationale: There are only two fields that change. One is the course description. The other is that Spring has been dropped from the Typically Offered section. No other changes are made.

Impact: NA

Effective: Spring 2018
From: 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.

Prerequisite: ECE 525, 557, and CHE 350.

Typically Offered: Fall

To: 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.

Prerequisite: ECE 525, 557, and CHE 350, CHE 356.

Typically Offered: Fall

Rationale: Course prerequisite refers to a course (CHE350) which is no longer a required course in the ECE curriculum. The needed information from CHE350 is now taught in CHE356 Fundamentals of Electrical Properties.

Impact: None, CHE356 is already a required course for ECE majors

Effective: Spring 2018

From: 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. The circuits are fabricated by an external service (MOSIS).

Note: Three hours recitation a week.

Prerequisite: ECE 241 and 525.

Typically Offered: Fall

To: 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. The circuits are fabricated by an external service (MOSIS).

Note: Three hours recitation a week.

Prerequisite: ECE 241 and 525.

Typically Offered: Fall

Rationale: It has been difficult to have the integrated circuit chips fabricated and tested in one semester course. Only the description is changed by removing the last phrase. No other changes are made.

Impact: NA

Effective: Spring 2018
From: 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.

**Prerequisite:** ECE 502 and concurrent enrollment in ECE 772 and AP 773.

**Typically Offered:** Fall

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To: ECE 773 - Bioinstrumentation Design Laboratory, Credits: 1

Design and testing of hardware and software for acquiring and analyzing biomedical signals.

**Note:** Three hours lab per week.

**Prerequisite:** ECE 502 and concurrent enrollment in ECE 772 and AP 773.

**Typically Offered:** Fall

**Rationale:** The requirement for concurrent enrollment in AP 773 has been dropped, since this course is no longer offered. In the course description, “biological signals” has been replaced with “biomedical signals”, which better describes the signals covered in this course.

**Impact:** NA

**Effective:** Spring 2018

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**Civil Engineering**

From: CE 828 - Advanced Soil Mechanics, 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.

**Prerequisite:** CE 522 and CE 802.

**Typically Offered:** Fall

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To: 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.

**Prerequisite:** CE 522 and CE 802.

**Typically Offered:** Every third semester not including Summer

**Rationale:** The current title is very general and it does not properly reflect the content of the course. Thus, the students are not well informed when deciding whether to enroll in this course. Consequently, it is proposed herein to change the title so that the new title better reflects the course content.

**Impact:** none

**Effective:** Spring 2018
From: DMP 722- Veterinary Virology, Credits: 3

Morphology, biology, and classification of viruses and their relation to the causes of disease.

Note: Two hours recitation and three hours lab a week.
Prerequisite: DMP 705 and DMP 712.
Typically offered: Spring

To: DMP 822- 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. Specific topics covered in this course are attached

Note: Two hours recitation and three hours lab a week.
Prerequisite: DMP 705 and DMP 712.
Typically offered: Spring

Rationale: To meet the needs of the graduate school requirements for 15 hours at the 800-level or above, we are requesting a course number change from DMP722 to DMP822. This will allow the course to be eligible for fulfilling the requirements of the graduate and post-DVM graduate degree requirements.
Impact: No direct impact
Effective: Spring 2018

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Expedited Course Drop

ECE 765 - Digital Radio Hardware Design, Credits: 3

Advanced topics in digital radio communication systems. Topics include the design and application of state-of-the-art RF and baseband circuits found in products ranging from cordless and cellular phones to wireless local area networks. System-level issues including coding, duplexing, and multiple access techniques are also covered, and a team-based project provides experience with RF hardware research and development activities.

Note: Three hours a week.

Requisites: Prerequisite or concurrent enrollment: ECE 696; Prerequisite: ECE 622 or ECE 764 or consent of instructor.

Typically Offered: On sufficient demand
Rationale: Course has not been taught in recent years and faculty doing course does not plan to continue it.

Impact: N/A
Effective: Spring 2018
CS 784 - Advanced Soft Tissue Surgery
Increase student exposure to soft tissue surgical theory, techniques and importance of veterinary literature in practice. Course will provide practical, hands-on surgical experience that mimics small animal general practice by utilizing both cadavers and appropriate clinical cases. Course allows students interested in surgery in private practice or those considering internship and residency training an opportunity to further explore the field.

Prerequisite: Fourth-year standing in the College of Veterinary Medicine and must have completed CS 754 prior to participating in this course.

Rationale: This course is not longer being offered. It was replaced by CS 795 - Advanced Surgical Experience.
Impact: N/A
Effective Date: Spring 2018

CS 824 - Life Long Learning Skills for Professional Students
Develop basic skills in veterinary students and other professional students to help them assess recent scientific literature and continuing education information and help them choose which information to incorporate into their professional skills and knowledge base.

Prerequisite: 3rd year standing in the veterinary curriculum.

Rationale: Material has been incorporated into another veterinary course.
Impact: N/A
Effective Date: Spring 2018

Expedited Curriculum Changes

Master of Software Engineering (M.S.E.)

<table>
<thead>
<tr>
<th>From:</th>
<th>To:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Master's degree requirements</strong></td>
<td><strong>Master's degree requirements</strong></td>
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<tr>
<td>The program of study for the MSE program consists of 33 credits that must include the following:</td>
<td>The program of study for the MSE program consists of 33 credits that must include the following:</td>
</tr>
<tr>
<td>- CIS 740 - Software Engineering Credits: 3</td>
<td>- CIS 740 - Software Engineering Credits: 3</td>
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<tr>
<td>- CIS 744 - Advanced Software Analysis and Design Credits: 3</td>
<td>- CIS 744 - Advanced Software Analysis and Design Credits: 3 or CIS 744 - Advanced Software Analysis and Design Credits: 3</td>
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<td>- CIS 748 - Advanced Software Management Credits: 3</td>
<td>- CIS 748 - Advanced Software Management Credits: 3</td>
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<td>- CIS 771 - Software Specification Credits: 3</td>
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<td>- CIS 841 - Verification and Validation Credits: 3</td>
<td>- CIS 841 - Verification and Validation Credits: 3</td>
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<tr>
<td>- CIS 895 - MSE Project Credits: 0-6</td>
<td>- CIS 895 - MSE Project Credits: 6</td>
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</table>
One of the following specialty sequences (6 credits):

### Bioinformatics
- CIS 734 - Introduction to Genomics and Bioinformatics Credits: 4
- CIS 834 - Machine Learning for Bioinformatics Credits: 3

### Data Mining and Information Retrieval
- CIS 732 - Machine Learning and Pattern Recognition Credits: 3
- CIS 833 - Information Retrieval and Text Mining Credits: 3

### Distributed Systems
- CIS 725 - Advanced Computer Networks Credits: 3
- CIS 844 - Agent-Oriented Software Engineering Credits: 3

### Intelligent Systems
- CIS 730 - Principles of Artificial Intelligence Credits: 3
- And one of the following:
  - CIS 732 - Machine Learning and Pattern Recognition Credits: 3
  - CIS 830 - Current Topics in Artificial Intelligence Credits: 3
  - CIS 844 - Agent-Oriented Software Engineering Credits: 3

### Security
- CIS 751 - Computer and Information Security Credits: 3
- CIS 755 - Advanced Computer and Information Security Credits: 3

### Web-based Systems
- CIS 726 - Advanced World Wide Web Technologies Credits: 3
- And one of the following:
  - CIS 732 - Machine Learning and Pattern Recognition Credits: 3


One of the following specialty sequences (6-7 credits):

### Bioinformatics
- CIS 734 - Introduction to Genomics and Bioinformatics Credits: 4
- CIS 834 - Machine Learning for Bioinformatics Credits: 3

### Data Mining and Information Retrieval
- CIS 732 - Machine Learning and Pattern Recognition Credits: 3
- CIS 833 - Information Retrieval and Text Mining Credits: 3

### Distributed Systems
- CIS 725 - Advanced Computer Networks Credits: 3
- CIS 844 - Agent-Oriented Software Engineering Credits: 3

### Intelligent Systems
- CIS 730 - Principles of Artificial Intelligence Credits: 3
- And one of the following:
  - CIS 732 - Machine Learning and Pattern Recognition Credits: 3
  - CIS 830 - Current Topics in Artificial Intelligence Credits: 3
  - CIS 844 - Agent-Oriented Software Engineering Credits: 3

### Security
- CIS 751 - Computer and Information Security Credits: 3
- CIS 755 - Advanced Computer and Information Security Credits: 3

### Web-based Systems
- CIS 726 - Advanced World Wide Web Technologies Credits: 3
- And one of the following:
  - CIS 732 - Machine Learning and Pattern Recognition Credits: 3
Technical Electives

Two additional computer science courses (700 level or above). Other technical courses may be substituted upon approval. (6 credits).

Notes

As part of CIS 895, each student specializes in an application area and does a project related to that application area. Each student will produce and present a “software portfolio” that contains a collection of documents related to the software development activity.

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 above requirements.

Rationale: To make the curriculum more flexible but still ensuring rigorous coverage of core Software Engineering concepts, we want to change the core requirements to allow students to take either CIS 740 or CIS 744. This will require some minor changes to several course prerequisites to include either CIS 740 or CIS 744 to be included as a prerequisite instead of just CIS 740, for core courses CIS 748, CIS 841, and CIS 895. No other changes are required. There are a few minor edits to make the description more readable and add one course to the technical electives.

Impact: No impact on other units.

Effective: Spring 2018

Computer Science (M.S.)

From:

Course work must include a course from each of the following areas:

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.

Languages:

To:

Course work must include a course from each of the following areas:

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.

Languages:
- **CIS 705 - Programming Languages** Credits: 3
- **CIS 706 - Translator Design I** Credits: 3
- **CIS 771 - Software Specification** 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 725 - Advanced Computer Networks** Credits: 3

**Structures:**

- **CIS 730 - Principles of Artificial Intelligence** Credits: 3
- **CIS 740 - Software Engineering** 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 636, CIS 706, CIS 722 or CIS 690. 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
Any course numbered CIS 800 or higher except seminar, projects, and research courses. No course may be used to satisfy more than one requirement.

**Rationale:** To include some new courses that serve to satisfy the breadth requirement in the systems area, we want to add CIS 726 and CIS 751 to the systems area to meet that requirement. We are also correcting a spelling error in the description of the implementation area.

**Impact:** No impact on other units.

**Effective:** Spring 2018

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Computer Science (Ph.D.)

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**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 three areas: Systems, Theory and Software.

The Breadth requirement must be completed by the end of the third semester. If a student is planning to take one or more proficiency exams to satisfy the Breadth Requirement, it is highly suggested that they take those exams each semester starting with their first semester in the PhD program. Additional time may be granted at the time of admission if the student joined the program without a Master’s degree. 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 an A in each course used to satisfy the Breadth Requirement. Courses taken at KSU as part of B.S. or M.S. or M.S.E. degree or approved courses from institutions with joint-PhD program with CIS Department at KSU can be used to satisfy the breadth requirement.

**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**

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The student must receive an A in each course used to satisfy the Breadth Requirement. Courses taken at KSU as part of B.S. or M.S. or M.S.E. degree or approved courses from institutions with joint-PhD program with CIS Department at KSU can be used to satisfy the breadth requirement.
The specific topics covered in the exams are defined in reading lists. The exams will be scheduled in November and April.

### Proficiency in Systems Area

Proficiency in Systems area can be demonstrated by completing one of the following:

- Passing a Systems exam based on undergraduate operating systems and database systems courses.
- Taking one course each from the following two groups:
  - CIS 520, CIS 722
  - CIS 560, CIS 761

### Proficiency in Software Area

Proficiency in Software area can be demonstrated by completing one of the following:

- Passing a Software exam based on undergraduate programming languages and software engineering courses.
- Taking one course each from the following two groups:
  - CIS 641, CIS 740
  - CIS 505, CIS 705

### Preliminary Examination

Ph.D. students must pass a preliminary examination which will be the 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 approximately four weeks and the last presentation must be before the finals week.

The RPE exam can be taken only after a student has finished the PhD Breadth Requirement.

Students must have their Program of Study filed with the Graduate School before requesting to schedule the first
presentation (see Section 4.5). The student must request the ballot from the Graduate School before the final presentation. Upon passing the depth requirement, the student will be admitted to candidacy for the Ph.D. degree by the Graduate School.

For the RPE exam, the student must also fill out the RPE Form and form a RPE committee consisting of three faculty members from the CIS department. Members of the PhD supervisory committee (as listed in the Program of Study form) belonging to the CIS department must be included in the RPE committee. However, the Chair of the RPE committee must not be the Major Professor.

The student will start this process by choosing an area in consultation with the Major Professor. The first presentation should include a literature survey of the area and potential problems in the area. At the end of the first presentation, the supervisory committee will assign a specific problem to be explored. The second presentation should present the progress made towards addressing this problem. The third presentation must be accompanied with a 15-page written report containing literature survey, a description of the problem addressed, the technical approach used to solve the problem and the results. 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 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”. The Chair of the RPE committee will record the committee decision on the preliminary ballot.

The RPE must be taken by the end of the fourth semester. If the RPE is graded as “Fail”, then the student fails the Preliminary exam. As per Graduate School guidelines, the student will have one more chance to pass the Preliminary exam by taking the RPE exam again in the following semester. During the second attempt, the supervisory committee may choose to give the student a different problem to work on.

Rationale: To include some new courses that serve to satisfy the breadth requirement in the systems area, and add some courses which were previously overlooked, but should have been included, we want to add CIS 720, CIS 721, CIS 726, and CIS 751 to the systems area to meet that requirement. Also, under Proficiency in Software Area, we want to change CIS 540 to CIS 641 to comply with the current course numbering.

Impact: No impact on other units.

Effective: Spring 2018
Non-Expedited New Courses

Food Science

**ADD:** FDSCI 910 Foodborne Pathogenic Microbiology, 2 credit hours
Spring, every other year in odd years

The overall goal of this course is to develop a deeper understanding of foodborne pathogen virulence and pathogenicity mechanisms. More specifically, students will explore the mechanisms that allow foodborne pathogens to survive and cause illness in the host. Students will utilize the knowledge gained in this class to discuss the impact that foodborne illness has on our society and identify opportunities for intervention. The course will be 100% lecture.

This is not a repeatable course and retake rules will apply if a student reenrolls.

**Pre-Requisite:** FDSCI 600

**Rationale:** Kansas State University is strong in food safety expertise and this course aims to leverage that expertise to benefit graduate students who are particularly interested in the food safety aspect of food science. The current food science curriculum includes Food Microbiology and the lab (FDSCI 600 and 601), which largely focuses on food safety, although other topics such as fermentation and food spoilage are covered. However, advanced food safety concepts are, at best, briefly mentioned in FDSCI 600 and 601. Therefore, the need exists for a more challenging food safety course offering. The proposed course, Foodborne Pathogenic Microbiology, is designed to fill that gap in the curriculum. In the spring of 2015 this course was offered as a pilot course (FDSCI 961) to gauge interest. Student enrollment and feedback indicates that demand and interest exists for this course. It is proposed that Dr. Sara Gragg (Food Science) will co-teach this course with Dr. Randall Phebus (Food Science) to leverage two Kansas State University faculty members with extensive food safety expertise.

**Impact (i.e. if this impacts another unit) – Statement should include the date when the head of that unit was contacted, and the response or lack of:** The proposed course title “Foodborne Pathogenic Microbiology” is similar to the BIOL 530 course that is offered under the course name “Pathogenic Microbiology.” Dr. Sara Gragg contacted the BIOL 530 course instructor, Dr. Govind Vediyappan, on the 19th of December, 2016 to determine if a conflict exists with regards to course title and course topics between the proposed course and BIOL 530. Dr. Govind Vediyappan expressed concern (on the 19th of December, 2016) that the titles were very similar and that overlap does exist between the two courses (*Salmonella*, all 5 types of *E. coli*, *Campylobacter*, *Shigella*, *Listeria*, *Vibrio* and others). For this reason, Dr. Vediyappan suggested that the proposed FDSCI course focus solely on graduate students with a possible title of “Advanced Food Microbiology” and a 900 level course number. However, Advanced Food Microbiology does not reflect the course topics accurately. Therefore, we propose to keep the Foodborne Pathogenic Microbiology title, with the compromise of only offering this course to graduate students with the FDSCI 910 course number. Because Pathogenic Microbiology (BIOL 530) is an undergraduate course offering, we believe that by offering Foodborne Pathogenic Microbiology as an upper level graduate course (FDSCI 910) is a feasible solution.

**Effective:** Spring 2019

**ADD:** FDSCI 805 Food Safety/ Public Health Journal Club, 1 credit hour
Spring, every other year in even years

This course is designed to be a graduate student and faculty discussion of current journal articles in food safety and public health. Each week a graduate student will be responsible for selecting a journal article for the group to read and then leading the class discussion. This is designed to be an informal discussion and faculty in Manhattan and Olathe are encouraged to participate in the class sessions as schedules allow. The course will be 100% lecture.

This is not a repeatable course and retake rules will apply if a student reenrolls.

Recommend Pre-requisite: FDSCI 600
Rationale: The food science program regularly receives feedback from recent graduates that a variety of courses for graduate students is lacking. It is also critically important that graduate students demonstrate the ability to critically evaluate journal articles and discuss the implications of published research on food safety and public health. The proposed course aims to immerse graduate students in current research publications in food safety and public health. Students will be expected to locate/identify current research articles that fulfill the requirements for the class, provide a summary of the research, critically evaluate the article and lead a thoughtful discussion with the class.

Impact (i.e. if this impacts another unit) – Statement should include the date when the head of that unit was contacted, and the response or lack of: The proposed course will discuss the implications of current research in food safety and the implications of the research on public health. For this reason, the title of the course also includes “public health.” Therefore, Dr. Sara Gragg contacted Dr. Ellyn Mulcahy, Director of the Master’s of Public Health program, via email on the 1st of January, 2017 to determine if a conflict exists with regards to course title and course topics between the proposed course and other public health courses. Dr. Mulcahy responded that she did not anticipate a conflict.

Effective: Spring 2018

Diagnostic Medicine/ Pathobiology

ADD: DMP 814- Veterinary Bacteriology & Mycology Lecture, Credits 3
Fall
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. See attached for topics covered in the course.
Prerequisite: BIOL 455

Rationale: DMP 814 is the lecture part of DMP 812 and is designed for graduate students in the pathobiology or any other related graduate program at Kansas State University. Like DMP 812, this course is designed to provide basic knowledge of bacteria and fungi that cause diseases primarily in animals. Students will become familiar with characteristics and pathogenic mechanisms of bacterial and fungal pathogens that cause disease in farm and companion animals. We want to make this an 800 level course as it would benefit graduate students who are taking this course, not only for the quality of the content, but also to meet the credit hour requirement as mandated by the Graduate School.
Impact: None
Effective: Fall 2018

Food, Nutrition, Dietetics, and Health

ADD: FNDH 837- Descriptive Sensory Analysis: Rapid Methods, Credits:1
Summer, Odd years
Use and understanding of rapid sensory techniques to descriptively evaluate products.
Note: The students should have knowledge of basic sensory analysis as covered in FNDH 701 and FNDH 833 or equivalent.
Prerequisite: FNDH 701 and FNDH 833 or equivalent

Rationale: This course will be taught in the graduate Sensory Analysis and Consumer Behavior MS degree option in the Food, Nutrition, Dietetics and Health MS and PhD degree curriculum. The goal of this class is to provide students a general overview of the different rapid methods available for Sensory and Consumer Research and familiarize them with the set-up, execution, and reporting of these techniques.
Impact: None
Effective: Summer 2018