Kansas State University

Statistics Department Handbook

2018-2019

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www.k-state.edu/stats/

Table of Contents

Faculty

Our faculty has a broad range of interests in statistical theory and applications. The regular faculty, their degree-granting institutions and some of their research specialties are listed below.
Interim Department Head: James Neill

- **Nora Bello** (Michigan State): Linear Mixed Models, Hierarchical Bayesian Models, Design of Experiments, Statistical Consulting
- **Juan Du** (Michigan State): Asymptotic and Computational Methods in Spatial Statistics
- **Gyuhyeong Goh** (University of Connecticut): Bayesian modeling, Bayesian machine learning, Sparse high – dimensional data analysis
- **Michael Higgins** (University of California at Berkeley): Causal Inference, Design of Experiments, Nonparametric Statistics, Applied Integer Programming, Quantitative Methodology for the Social Sciences
- **Trevor Hefley** (University of Nebraska): Ecological Statistics, Hierarchical Bayesian Models, Spatial and Spatio-temporal Statistics.
- **Wei-Wen Hsu** (Michigan State): Two-component Mixture Models, Hypothesis Testing, Empirical Processes, Longitudinal and Correlated Data Analysis
- **Abigail Jager** (University of Chicago): Causal Inference, Likelihood Methods
- **Karen Keating** (Kansas State): Nonparametric Methods, High Dimensional Data, Biostatistics
- **James Neill** (Kansas State): Linear and Nonlinear Models, Model Adequacy Tests
- **Perla Reyes** (Wisconsin): Spatial-temporal Statistics, Bayesian Nonparametric Methods, Model Selection , Complex Networks
- **Pallavi Sawant** (Auburn): Robust Statistics, Dimension Reduction, Functional Data Analysis
- **Weixing Song** (Michigan State): Nonparametric Smoothing, Errors-in-Variables Models, Categorized Data Analysis
- **Christopher Vahl** (Kansas State): Design and Analysis of Experiments, Mixed Models, Equivalence Testing, Statistical Consulting
- **Cen Wu** (Michigan State): High Dimensional Data, Statistical Machine Learning and Statistical Genetics
- **Haiyan Wang** (Penn State): Nonparametrics, Longitudinal Data Analysis, Analysis of Designs with Large Numbers of Levels, Linear Models

Requirements

Advisors

New students will be assigned a provisional advisor during the orientation period prior to the first week of classes. The student will consult with his or her advisor to prepare a schedule of classes for the first semester and outline a provisional program of study. Within three semesters of study for M.S. students, (no later than the beginning of the third semester is strongly advisable) or within two semesters of passing the qualifying exam for Ph.D. students, the student should select a major professor (the semester in which the candidate passes the qualifying exam is counted as semester number one, and summers do not count toward the time limit). The major professor will serve as the student's permanent advisor, will help the student finalize a program of study, and will direct the student's research work.

After the major professor has been selected, an advisory committee will be formed in consultation with the major professor. The committee will be responsible for monitoring the progress of the student.

M.S. Degree

The MS degree program offers two tracks beginning fall 2018: a Mathematical Statistics track and a Data Science & Analytics track. 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 & Analytics track requires proficiency of topics studied in STAT 610 and 611, and at least 3 credit hours of a programming language course using C, C++, Fortran, R or Python, for admission. Students without such background prior to admission are required to take extra credits to fulfill requirements.

Two master's degree completion options are available for each track: the master's report option and the nonreport 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 nonreport option, the student must take 36 hours of coursework and pass a comprehensive exam for the Mathematical Statistics track (see below), or complete a Capstone Project for the Data Science & Analytics track, 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 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.

For the Mathematical Statistics track, the course work must include STAT 713, STAT 770, STAT 771, STAT 860, and STAT 861, along with STAT 720 or STAT 722. Note: Students planning to pursue the PhD in Statistics at K-State are required to take STAT 720. STAT 945 (Statistical Consulting) is recommended for those students with applied interests.

For the Data Science & Analytics track, the course work must include STAT 727; at least 3 credits from STAT 760, STAT 761; at least 6 credits from STAT 713, STAT 717, STAT 720 (or STAT 722), STAT 730; at least 6 credits from STAT 764, STAT 766, STAT 768.

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 and is at the department's discretion.

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.

M.S. Exam

Master's students in the non-report option 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, 771, and 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.

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.

Ph.D. Degree

Students are required to have at least 90 hours of course work and research credits, which includes at least 30 research credits. Additionally, up to thirty hours from a Master's program may be applied toward the 90 hours. The remaining credit hours must include the required courses listed below, and may also include elective courses approved by the student's major professor in consultation with the student's graduate committee. Elective courses may be selected from courses offered by the Department of Statistics or by other disciplines.

All Doctoral students are required to include STAT 842, 843, 860, 861, 870, and at least 7 credit hours of 900 level Statistics classes (selected from 903, 904, 905, 907, 940, 941, 945, and 950) in their program of study. In addition, all students should have at least a background in certain mathematical topics usually presented in advanced calculus courses. At K-State, these would be Math 633 and 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.

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 Qualifying Exam consists of three parts: applied statistics, mathematical statistics and linear models. The exam will be given once a year, in January. Students may take the exam as early as desired. The courses listed below are only intended to indicate the scope of the material covered. They are not required as prerequisite to taking the exam. Mathematical Statistics: STAT 842, 843; Linear Models: STAT 860, 861; Applied Statistics: STAT 720, 870. Students taking the Ph.D. qualifier are required to pass two of the three subject area exams. Students may take all three exams. Each of the three exam subcommittees will circulate to eligible students additional information regarding each exam during the summer semester prior to the January when the exams are given.

All aspiring Ph.D. candidates who will have taken STAT 860, 861, 720, 870, 842 and 843, or their equivalents, by the end of a fall semester are eligible and required to take the exam in the following January. Except for excused personal emergencies, eligible students who choose not to take the exam will be assigned a 'failure' for the exam. Otherwise eligible students who are on probation during the semester in which the exam is given will not be permitted to take it. No grade will be recorded for them. Students may request permission from their advisor to take the exam before they will have taken all of the courses listed above or their equivalents.

For each aspiring Ph.D. candidate the provisional program of study will include a reasonable timeline to take the exam and will include a tentative list of which parts of the exam the student plans to take. In general, a student with an M.S. in Statistics who starts Ph.D. course work in the department during the fall semester will take the exam no later than after their first three semesters in the program. A student with an M.S. in Statistics who starts Ph.D. course work in the department during the spring semester will take the exam no later than the January following their first four semesters in the program. Students admitted to pursue the Ph.D. but without the in Statistics should plan to take the exam no later than the January following their first five semesters in the program. Waivers of this requirement may be granted but only in exceptional cases. Further, students who fail to take the exam on schedule may lose funding as well as possibly receiving a failure on the exam, as indicated above.

Students who fail the exam may be granted a second chance when the exam is given again, during the following January. However, a second opportunity is not automatic and approval of such is based upon recommendation by the faculty.

Ph.D. Preliminary Exam

Dissertation Proposal

The doctoral preliminary examination will consist of a substantial thesis proposal. It wi1l be judged on how well the candidate has located a problem, searched the literature, read relevant material, and sufficiently refined the problem so that the candidate has a reasonable chance of writing an acceptable dissertation. The proposal will be presented to the candidate's supervisory committee in written form, and to the department and the supervisory committee in a public seminar. A candidate may take the preliminary examination at most twice. If the candidate fails the preliminary examination a second time, he or she will be dismissed from the Statistics graduate program.

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 candidate must provide a complete written copy of the proposal to each member of the candidate's supervisory committee two full weeks before the anticipated date of the public presentation. At the same time, the candidate must provide a short (less than one page) summary or abstract to all faculty in the Department of Statistics, and arrange for a seminar. The candidate will provide faculty not on the supervisory committee a copy of the complete proposal at their request.

Public Seminar

The candidate will present the public seminar at a date mutually agreed upon by the candidate, the candidate's supervisory committee, and the department head. The candidate must notify the Graduate School one month before the scheduled date. Preliminary exams are not to be scheduled during the last week of classes nor during the week of final exams. At the conclusion of the presentation, there will be a time for general questions from the audience. After the general questioning period, the general audience will be dismissed, and a second questioning period will begin with the candidate's supervisory committee and other interested Department of Statistics faculty members in attendance. The candidate should be prepared to answer questions that address specific points in the proposal, courses on the candidate's program of study, and general statistical knowledge. See Seminars section of Office Procedures below, for scheduling a seminar.

Evaluation of the Presentation

At the conclusion of the second questioning period, the candidate will be asked to leave the room, and any Department of Statistics faculty members still in attendance may stay to advise the candidate's supervisory committee as to the candidate's ability to pursue Ph.D. work. After providing advice, those who are not members of the candidate's supervisory committee will be excused. The candidate's supervisory committee will then discuss and vote on the candidate's performance, with a three fourths majority of favorable votes needed to pass the preliminary exam.

Pass-Fail Options for First Attempt

The supervisory committee may decide to do one of the following after the first preliminary examination.

1. **Unconditional Pass**. If at least three fourths of the members of the supervisory committee vote to pass the candidate, the ballot will be signed indicating pass and returned to the Graduate School.

2. **Conditional Pass.** With the approval of at least three fourths of the supervisory committee, the candidate may be granted a conditional pass. A conditional pass is granted when the written proposal, oral presentation, or subsequent questioning show deficiencies that are not deemed severe enough for failure but are of sufficient concern to deny an unconditional pass. In this event, the supervisory committee will specify what is required of the candidate to remove the deficiencies and the time period allotted to the candidate to remove the deficiencies. The ballot will be held and not returned to the Graduate School until the candidate has removed the deficiencies or until the end of the time period allotted for removal of the deficiencies, whichever comes first. The candidate may be asked to revise the proposal, study additional material, take a written exam, make an oral presentation or any combination of the above in order to clear up the deficiencies. If another oral is required, it will be presented to the supervisory committee and other interested Statistics faculty. Additional oral presentations required by the supervisory committee will not be public seminars. When the deficiencies have been removed or when the allotted time for removal of the deficiencies has expired, whichever comes first, the candidate's supervisory committee will meet to vote either to pass or fail the candidate. The candidate will be judged to have passed the preliminary examination if at least three- fourths of the members of the supervisory committee vote to pass the candidate. Otherwise the candidate will be judged to have failed the first attempt at the preliminary examination. At this point, the ballot will be signed indicating either pass or fail and returned to the Graduate School.

3. **Failure.** A candidate who fails to receive an unconditional pass and is not granted a conditional pass will be judged to have failed the first attempt at the preliminary examination. The ballot will be signed indicating failure and returned to the Graduate School.

Pass-Fail Options for Second Attempt

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. The candidate's supervisory committee will specify the format of the second attempt. If the first proposal is inadequate, the candidate may be asked to revise and present the revision to the supervisory committee and other interested Statistics faculty. If the candidate shows lack of knowledge in some key area related to the proposed research, the candidate may be asked to study the material and take a written and/or oral examination on the deficient area. If the supervisory committee decides that the topic will not likely lead to a dissertation in a reasonable amount of time, a new problem may be provided and a new proposal written with an oral presentation to the supervisory committee and other interested Statistics faculty. Additional oral presentations required by the supervisory committee will not be public seminars.

The supervisory committee may decide to do one of the following after the second preliminary examination.

1. **Unconditional Pass.** If at least three fourths of the members of the supervisory committee vote to pass the candidate, the ballot will be signed indicating pass and returned to the Graduate School.

2. **Conditional Pass**. With the approval of at least three fourths of the supervisory committee, the candidate may be granted a conditional pass. A conditional pass is granted when the candidate's second attempt shows deficiencies that are not deemed severe enough for failure but are of sufficient concern to deny an unconditional pass. In this event, the supervisory committee will specify what is required of the candidate to remove the deficiencies and the time period allotted to the candidate to remove the deficiencies. The

ballot will be held and not returned to the Graduate School until the candidate has removed the deficiencies or until the end of the time period allotted for removal of the deficiencies, whichever comes first. When the deficiencies have been removed or when the allotted time for removal of the deficiencies has expired, whichever comes first, the candidate's supervisory committee will meet to vote either to pass or fail the candidate. The candidate will be judged to have passed the preliminary examination if at least three fourths of the members of the supervisory committee vote to pass the candidate. Otherwise the candidate will be judged to have failed the second attempt at the preliminary examination. At this point, the ballot will be signed indicating either pass or fail and returned to the Graduate School. Failure of the second attempt will result in the candidate being dropped from the Ph.D. program in Statistics.

3. **Failure.** A candidate who fails to receive an unconditional pass and is not granted a conditional pass will be judged to have failed the second attempt at the preliminary examination. The ballot will be signed indicating failure and returned to the Graduate School. Failure of the second attempt will result in the candidate being dropped from the Ph.D. program in Statistics.

Timetable for Taking the Preliminary Examination

The preliminary examination must be taken within five semesters of passing the departmental qualifying examination. The semester in which the candidate passes the qualifying exam is counted as semester number one, and summers do not count toward the time limit. After passing the qualifying examination, the candidate should start preparing for the preliminary examination as soon as the supervisory committee determines that the candidate is ready.

Final Examinations for M.S. and Ph.D. Degrees

The responsibilities regarding scheduling and announcement of the final examination for M.S. and Ph.D. students are available in the Graduate Handbook as published by the Graduate School (**www.k-state.edu/grad/graduate_handbook**). Final exam**s** for both degrees are not to be scheduled during the last week of classes nor during the week of final exams.

Expectations

A thorough understanding of statistical theory and experience in applying statistical methods are keys to any statistician's success. Students are expected to strive for good grades in all courses. All students must take the required courses indicated previously and file a program of study in concordance with the guidelines given in the Graduate Handbook as published by the Graduate School. In particular, a final program of study should be filed once the major professor has been selected. More generally, graduate students should become familiar with the policies and degree requirements in the Graduate Handbook.

Permission to audit a class must be obtained from the instructor at the beginning of the semester before classes start. This policy holds for MS and Ph.D. level classes. Also note that students wishing to retake a course to replace a grade lower than a B must obtain permission from the Graduate School and their supervisory committee prior to enrollment. For details, see Section E.4 in Chapters 2 or 3 of the Graduate Handbook. The required form is available at the Graduate School website (http://www.k-state.edu/grad/academics/docs/forms/request-retake.pdf).

The department does a tremendous amount of consulting work both for researchers and students on campus and for individuals and agencies off campus. At some point in the student's stay at Kansas State, the student should get involved in one or more consulting projects. Projects vary in length of time and sophistication of methods needed to complete them. Students should contact the department head to find out what is available. Credit may be earned for consulting by registering for STAT 945. Registration for STAT 945 requires the approval of the instructor. When a student commits to a project, it is expected that the work will be carried to completion. A good job on a consulting project will be a satisfying and valuable experience.

The department has an excellent reputation for turning out students who know how to solve real- world problems. The consulting experience is a critical component in that process. Just one word of caution - students should budget their time so that both the consulting project and other departmental duties get done, including coursework and teaching. Consulting experience is not a substitute for good grades. Rather, it is a way to put into practice what one is learning in the classroom.

The department hosts many seminars every semester. Our speakers include people from across the country as well as our own faculty and graduate students. Seminars provide the opportunity to learn about current research in statistics, interesting consulting experiences and applications of statistics, new teaching ideas, job opportunities and career possibilities. **All graduate students are expected to attend the weekly seminars**. In addition, opportunities to participate in journal club activities and graduate student seminar presentations will be forthcoming.

We expect students to make adequate progress in the program. In most cases, two years is adequate to complete the M.S. degree, and four years beyond the M.S. degree is adequate to complete the Ph.D. degree. To fulfill the obligation that students pursue studies full-time, graduate assistants must be enrolled for a minimum of 6 hours of credit during fall and spring terms. International students not on graduate assistant support must be enrolled for a minimum of 9 hours of credit. The Graduate School does not require that graduate students be enrolled during the summer. Student progress will be reviewed by the department’s Graduate Program Committee each

year. Students who are being supported by the department must make adequate progress to be considered for continuing support.

Students frequently share ideas about coursework, teaching, and other aspects of academics. However, please take some care if working together on homework for a class. You should always check with the instructor of the class regarding his/her policies about students working together on assignments. If the policy is that students work alone, then that policy should be honored. Violating it would be considered cheating.

Graduate Progress Policy

Voted on and approved by the faculty on Dec. 6, 2016

The policy will refer from time to time to the Statistics Department Handbook located at **http://www.k-state.edu/stats/2016%202017%20Handbook%20Final.pdf** and which is updated annually. The Statistics Department has a Graduate Student Progress Committee comprised of faculty appointed by the Department Head in addition to the Graduate Program Directors. The policy below is divided into three parts: newer students with a provisional advisor, MS students with a permanent program committee, and PhD students with an official program of study approved by the graduate school.

- **Newer Students with a provisional advisor**. Newly admitted students are assigned a provisional advisor. These individuals advise students on course selection and a timeline to form a permanent graduate committee and/or take the qualifying exams (in case of PhD students). These timelines are given in the department handbook (see Requirements section). A preliminary program of study will be used to lay out the initial coursework and the plan to meet required timelines. At a minimum of once each academic year (and more commonly each semester) the Graduate Student Progress Committee reviews each students' grades in courses and solicits feedback from all faculty who might be familiar with a student's work. The committee then compiles a report that identifies students who are not making adequate progress. These students may have poor grades, be on probation, or are not meeting the timelines for forming their permanent committee. The faculty then meet to discuss the report and agree upon which students are not making adequate progress. The department head then meets with these students and reaches an agreement with the student about a plan to get back on track. Consequences of failing to do so include loss of financial support or dismissal from the program. For more details regarding loss of financial support refer to the department handbook, page 13, Academic Progress and Denial of Financial Support.

- **MS Student with a formal committee.** MS students should present a plan for either taking their MS exam or, if doing the report option, a plan for conducting their research to their committee within three months of filing their official program of study with the graduate school. At one year after filing their program of study, those students who have not completed all the requirement for the MS degree should compose a self-assessment report. Guidelines for this report are in the appendix below. The student's committee will review the report and make comments. The student's advisor will then meet with the student to reach agreement on a plan to complete the requirements for the MS degree. This agreement will be in written form and will include a sign-off page that is signed by both student and advisor. Unless there are extenuating circumstances, the student will be required to complete the requirements for the MS degree within one year of this agreement. Failure to do so may result in loss of financial support and/or in dismissal from the program. The Graduate Student Progress Committee will include, in their report, MS students with a committee who are not making adequate progress towards completion of their degree.

- **PhD Student with official program of study approved by the graduate school.** Every fall term, by October 1st, each PhD student with an approved program of study should compose a self-assessment report. Guidelines for this report are in the appendix below. The student's committee will review the report and make comments. The student will then have the opportunity to make revisions to the report based on feedback from the committee. The final version of the report, due by November 1st, will include an

updated plan to complete the requirements for the PhD degree and a sign-off page that is signed by both student and advisor. If a student is failing to make adequate progress, according to the student's graduate committee, they will be notified accordingly by their advisor and the department head, and they will be included in the annual report by the Graduate Student Progress Committee. They must show adequate progress by the next fall term or risk loss of financial support and/or dismissal from the program.

Appendix:

Requirement of Student Self-Assessment and Progress Report

According to Graduate Handbook Chapter 1 E, **http://www.k-state.edu/grad/graduate-handbook/chapter1.html#AnnualProgressReviews**, a self-assessment by the student toward degree completion is required.

Starting Fall 2017, all M.S. students that have not finished all requirements for their degree at one year after a program of study was approved by the graduate school and all PhD students with an approved program of study are expected to submit a self-assessment/progress report to their committee and provide evidence of his/her progress toward completing their degree. A copy of the report will be kept on file with the student's record and the Graduate Student Progress Committee informed of the advisor's assessment of the student's progress.
The assessment should be based on progress after the last report. A report of about one to three pages in length is typically sufficient. The report might include/address the following items:

- Date admitted to your current program (M.S. or Ph.D. program) and date of official Program of Study filed /approved by the graduate school
- Student's degree progress, including completion of milestones for the relevant degree (courses, qualify exams, M.S. report for M.S. students or preliminary exams, oral defense, dissertation completion for Ph.D. students), and student strengths and weaknesses for completing the research and degree. If there are deficiencies or weaknesses, plan for corrective actions.
- What has been accomplished since last assessment and progress report/where the project is going
- What learning has occurred
- Problems encountered and where they lead the project
- If there is a change in the project's focusing question, give the rationale for a change
- Investigation needs
- Revised/extended bibliography
- Any deficiencies in the earlier investigation through updates such as a completed bibliography, a refined focusing question, and so on
- Other thoughts and comments
- The report should include any writings, creative pieces, data and analysis, etc. that document progress, as well as an updated plan for completing the requirements for the PhD. It may consist of an updated list of publications, presentations, academic honors and fellowships, etc. The student may include academic goals for the upcoming semester/year.
- As indicated on the earlier pages, the final report will include a sign off page signed by the student and advisor.

It is anticipated, for students who have active engagement in their study and research, that the progress report will take less than two hours to complete. A regularly maintained and well-documented journal should facilitate the writing of the progress report.

Classes Offered

The pattern below repeats every two years starting with even numbered years Parentheses denote courses that are optionally scheduled.

COURSE	FALL Even	SPRING Odd	SUMMER Odd	FALL Odd	SPRING Even	SUMMER Even
701	701	701		701	701	
703	703	703	703	703	703	703
705	705	705	705	705	705	705
706	706			706		
710	710					
713	713			713		
716				716		
717		717			717	
720		720	720		720	720
722	722			722		
725	725			725		
726	726			726		
727		727			727	
730		730			730	
736		736				
745					745	
750	(750)	(750)	(750)	(750)	(750)	(750)
760					760	
761		761				
764	764					
766				766		
768		768				
770/771	770	771		770	771	
(799)	(799)	(799)	(799)	(799)	(799)	(799)
818	818					
842/843	842	843		842	843	
850					850	
860/861	860	861		860	861	
870	870			870		
880				880		
(898)	(898)	(898)	(898)	(898)	(898)	(898)
(899)	(899)	(899)	(899)	(899)	(899)	(899)
903		903				
904					904	
905	905					
907				907		
940	940					
941					941	
945	(945)	(945)	(945)	(945)	(945)	(945)
950	(950)	(950)	(950)	(950)	(950)	(950)
(999)	(999)	(999)	(999)	(999)	(999)	(999)

Financial Support

The Statistics Department offers two primary types of financial support: the teaching assistantship and the research assistantship.

The great majority of the positions are teaching assistantships. Our teaching assistants will generally have complete responsibility for an introductory class or leadership responsibility for a studio classroom. Therefore, it is important for us to have people who are comfortable in front of a classroom. Students whose native language is not English are required to pass the SPEAK exam or have a 22 or higher score on the speaking portion of the IBT to be considered for a teaching assistantship. This is a University requirement which cannot be waived by the department.

We have a small number of full or part-time research assistantships. The number varies from semester to semester. The student who is appointed to a research assistantship will be involved in one or more major consulting or research projects. We usually choose the more experienced students for this type of appointment. Demonstrated ability and willingness to work hard are the two most important criteria for selecting research assistants.

Normal appointments for both research and teaching assistantships are 5/10 time which presumes 20 hours of effort per week. Students with research and/or teaching assistantships should not plan on working at other jobs simultaneously, and should do this only after clearing it with the department head and their advisor.

We try to make summer support available to those who have served as teaching assistants or research assistants during the academic year. Some appointments require classroom teaching and others require assisting faculty members with their teaching and research. We have also been able to arrange a few internships with various industries. Unfortunately, summer support cannot be guaranteed nor can an amount be guaranteed.

The department also has a few scholarships available for current students for the upcoming semesters. Announcements for applications and deadlines are sent out early in the spring semester. Selections are made by a committee of faculty members. Decisions are based on application materials submitted by the student, grades and activity within the department and/or University, such as seminar attendance, assisting at the annual Conference on Applied Statistics, working with the Statistics Club or volunteer work in the community. Winners are notified by letter within a couple of weeks after the deadline.

There may also be part-time hourly appointments for grading.

Academic Progress and Denial of Financial Support

The Statistics Department Graduate Program Committee has developed a policy to help guide students through the Graduate Program in a timely and beneficial manner. The policy has been discussed and approved by the faculty. The policy items are listed below.

These items are consistent with the Graduate Handbook which was developed by the Graduate Faculty at K-State (**www.k-state.edu/grad/graduate_handbook**). All graduate students at K-State are subject to the policies therein. In particular, note Part G in Chapters 2 and 3.

As indicated in the current Statistics Department Handbook, in most cases, two years is considered adequate to complete the M.S. degree and four years beyond the M.S. degree is adequate to complete the Ph.D. degree.

A student who is on academic probation for more than one semester (consecutively or not) will be denied financial support from the department.

A M.S. student must select a major professor within three semesters (excluding the summer) of study. Failure to do so will result in loss of financial support.

A Ph.D. student must select a major professor and form a committee within two semesters (excluding the summer) of passing the qualifying exam. Failure to do so will result in loss of financial support.

A Ph.D. student must take the preliminary examination within five semesters (excluding summers) of passing the qualifying exam. Failure to do so will result in the loss of financial support.

The Graduate Program committee will make a list of students every semester who it determines are not making satisfactory progress towards completion of a degree. Note that this includes students who are not on academic probation. It also includes students who have completed research for a degree and choose not to defend. Financial support for such students will be terminated at the end of the semester. In addition, students who fail to make satisfactory progress as agreed upon by the major professor and/or supervisory committee will not only lose departmental support but will be recommended for dismissal from the Graduate School. Finally, at the discretion of the major professor and/or supervisory committee, if sufficient progress is not being made on a degree research topic then the student should plan to relinquish the research topic for degree purposes.

A student may appeal a denial of financial support to the Graduate Program committee. Refer to Graduate Progress Policy, for additional information.

Statistics Labs

Statistics Department Computer Lab

The department computer lab (room 10) is for the use of all Statistics majors, undergraduates, graduates, faculty, and consulting clients. There are 6 personal computers, a laser printer, and smart board for student use. If you are new at using this equipment, please get help. The fewer dollars we have to spend on repairs, the more dollars we have available for other things.

If you have problems with your document not printing, do not repeatedly hit the Print button. If you inadvertently hit it, remove all jobs from the print queue. Check to see if all jobs have been deleted before reporting that the printer is not working. Do not use the printer to make copies.

It is expected that the users of the Stat Lab will keep it clean. The doors to the Stat Lab lock automatically. Please be sure the door is closed when you leave the lab, day or night. Please keep the AC on and the door closed. Access to room 10 is by use of a key card. These cards are issued by the department. Please contact the office staff personnel if you have not yet been issued a card.

Dickens Hall Room 1 is a University Computing lab and is available 24 hours a day. It has a wide variety of software available such as Excel, MS Word, Minitab, etc. It is available for all Kansas State students to use.

Printing Reports, Theses, Dissertations, Resumes

These documents should be entered using MS Word, or Latex. The student is required to give printed copies of his/her dissertation or report to the major professor and all committee members at his/her own expense. Do not print multiple copies on the printer in room 10. Print one original, and then take that original to a copy center. This is not a departmental expense.

Help Lab

The department Help Lab is located in room 12. Undergraduate students who need assistance with homework or statistical computing may come here. The Help Lab is open during the days when classes are in session. It is closed in the evenings, during vacation and during final exam periods.

Consulting Lab

The department provides consulting services in room 11 to the university through K-State Research and Extension. You may refer prospective clients to one of the consulting faculty who have appointments for which a portion of the duties are assigned as consulting. You may at times have the opportunity to do consulting work for student or faculty clients. We urge you to visit with one of the consulting faculty before undertaking a project. This will help insure that your consulting advice is correct.

Guidelines for Teaching Assistants

Syllabus

Copies of the 340, 350 and 351 syllabus may be obtained from the course coordinator. Please follow the syllabus as closely as you can. If you would like to modify the syllabus or are having problems following the syllabus, see the course coordinator.

Policy Sheet

You should prepare a sheet of class policies to hand out to students (along with the syllabus) on the first day of class. Your class policy sheet should include the following:

- A list of required and/or recommended materials that the student will need for your class.
- How to contact you.
- The grading procedure that will be used to evaluate student grades in this class.
- Policy for missed exams or late homework.
- Copy of University's Undergraduate Honor Code
- Contact information for the course coordinator

Your policy sheet is important. Be sure to carefully consider the contents. This sheet will help to establish clear expectations of the students and provide you with protection in case of a student conflict with regard to class procedures. Make sure that your policies are something you can stick with during the semester. Students tend to get frustrated when the requirements for the course change. Below are more complete descriptions of the things to include in your policy sheet.

Contact Information

Students need to know how to get in touch with you outside of class. Be sure to include your e- mail address on your policy sheet. E-mail is an easy way to communicate with your students once you get in the habit of checking it at least once daily. If you want, you can include your office phone number; however, remind students that if they cannot reach you by phone to send you an e-mail message. You must also include your office hours and help lab time. If your schedule is not set, simply put "To Be Announced" and then put the times on the board when you know your schedule.

Evaluating Students

Students are to be evaluated according to grading criteria in the syllabus, and as agreed to by the course coordinator. Students are very concerned about grades. Let the students know your grading scale at the beginning of the semester and stick to it. They want to be assured that they will be evaluated fairly.

Suggestions for a Grading Plan

If you are looking for a grading plan, here is one that would be acceptable.

Grades will be based on the following:

- 2 one-hour exams (according to the syllabus), 20% per exam.
- A comprehensive final worth 30%. The final is required of everybody.

- Homework including writing, computer, in-class activities, and quizzes: 30%.

Note: Attendance may also be considered as factor in the grade, at the instructor's discretion.

Grades will be assigned according to the following percentages.

A	90% to 100%
B	80% to 89%
C	70% to 79%
D	60% to 69%
F	below 60%

The ranges for determining letter grades are up to you. The ranges above are just suggestions. Your scale will depend on how strict or how generous you are with partial credit. While there are no quotas on the number of A's or F's that can be given in your class, most classes are neither exceptionally bad nor exceptionally good in terms of the capabilities of the students. Keep that in mind when giving partial credit and assigning grades.

Regardless of the grading plan that you use, it is important to allow students some way to redeem themselves if they obtain just one low hour exam or one low quiz score. Dropping a low quiz/homework score is an idea that has worked for others.

Make-up Exams or Late Homework

When establishing your policy for make-up exams or late homework consider the motto "tough but fair." You want a policy tough enough that students will work hard to meet your deadlines but fair so that in a case where a student has a legitimate problem they can redeem themselves.

One policy for late homework that has worked well for others is: Late homework will be accepted (with a 10% penalty per day) only up to the time that the assignment has been graded and returned. Note this policy lets the students know that they can turn in late homework but there is a time limit and it helps you because grading late homework can be very time consuming.

Whether or not to allow make-up exams is a difficult thing to decide. Set the policy you feel most comfortable with. If you decide to allow make-up exams, you may want to include a clause in your statement such as: All make-up exams must be arranged in advance when possible. Verifiable documentation (e.g. note from a doctor) is required to make-up an exam.

Exam Format

You may want to include a brief statement about the format of your exams. For instance: Exams will be closed-book, but students may bring one 8½" x 11" sheet of paper with formulas to the exam. Statistical tables will be provided as needed. Calculators may be used for computing numerical values. However, if you are not sure what your policy will be about formula sheets, closed-book, etc. it is better to leave it out for the first semester you teach.

University's Undergraduate Honor Code

Remind students that you can fail them if they cheat. You may want to include the KSU Honor Pledge: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." The pledge and other information about the Honor System are available at the web site: **www.ksu.edu/honor**.

Exam Questions

STAT 340 and 351 instructors write their own exams and determine the grading scale. GTAs in their first year at KSU are required to submit a copy of each exam to the course supervisor for review. The exams must be submitted at least three days prior to giving the exam. This 3-day period is necessary in order to take care of any revisions/final editing of your exams.

Exam questions should be like the "average" homework problems with the addition of some general education questions. General education questions emphasize statistical concepts; these questions may be essays about statistical concepts or questions about projects and activities from class. Exams should represent the material covered in class.
Make sure your exams are readable and that questions are clearly and concisely stated. Always try to include the point values of the problems for the students' information. More experienced GTAs will be able to help you get started.

Take the exam yourself before giving it to the students. If it takes you more than 15 minutes to work it, it is probably too long. Try out your exam questions on your colleagues.

If you leave the exam with one of the staff, please let them know who will be taking the exam, when they will be coming to pick it up and how long they have to take the exam. If someone from the Student Access Center is picking up an exam for one of your students, make sure you have left it in the main office in a campus envelope (you can get the campus envelope from a staff member) with the student's name, instructor's name and class/section.

Be sure that there is adequate information at the top of your exam. In addition to space for the student to insert his/her name, you should always include the course number (e.g., Statistics 350), your name, the date (or at least the semester of the course; e.g.: Fall 2016 or October 2, 2016), and some indication of which exam this is (e.g., Exam 1).

Dealing with Students

Establishing clear procedures at the beginning of the class will set the right tone for the conduct of your class. Learning students' names and calling on them will help establish rapport. Practice the Golden Teaching Rule. Treat your students as you would like to be treated by your professors. You may wish to ask students to prepare a profile sheet for you which would include such information as major, previous math courses, hometown, age, special comments, etc.

Fortunately, you will seldom have discipline problems. The thing that upsets students the most is the feeling that they have been treated unfairly. See Dr. Jager or Department Head if you run into a situation you have trouble handling.

Students who do poorly on the first or second exams generally will do poorly in the course. Talk to these students and find out what's going on. In most cases, it is best for such students to drop the course and try it again at some other time. Students will sometimes feel a sense of "disgrace" for doing poorly and will wish to continue in the course to "prove" themselves. Generally this strategy leads only to frustration and disappointment. It is usually better for the student to protect his or her grade point average by dropping.

Unfortunately, cheating sometimes occurs on exams. Some instructors will prepare two different, but similar, exams so that adjacent students will not have the same questions. Keeping students "spread-out" in the classroom may also help. Remind students that you can fail them if they cheat. If you have a problem with students cheating, check with Department Head or other faculty to obtain advice on how to handle the situation. The Undergraduate Honor System (web site: www.ksu.edu/honor) is another source of information when dealing with academic dishonesty.

GTA Meetings

We encourage our GTAs to work together. Exchanging ideas will help improve the quality of our instruction. Attendance at the weekly GTA meetings is required. To be effective, the content of our courses must be very similar across sections. Working together will help achieve the consistency needed.

Evaluations

You are required to give your students the opportunity to evaluate you. Office staff will put evaluation forms in your mailbox the week before finals, or evaluations can be done electronically via K-State Online. The evaluations are primarily used for feedback so the individual instructor can make improvements in his or her teaching. However, the department reviews the evaluations. Additionally, we reserve the right to evaluate any GTA during the semester. This evaluation may include having the students evaluate the instructor and/or having a faculty member visit the classroom and observe the GTA in the performance of his/her duties.

Office Hours/Help Session

Instructors must post and hold regular office hours, at least two hours per week. At the beginning of each semester, you will receive a schedule to fill out and post on your office door. You should also return a copy to the Department office to keep on file. We also schedule help sessions in Room 12 of Dickens Hall. Undergrad students who need help with homework or statistical computing may come there. All graduate teaching assistants are required to spend at least 1.5 hours per week in the Help Session Room. Sign-up for help session times will take place during the first week of classes each semester. The Help Session Room will be open during the days when classes are in session. It will be closed at night, during vacation and during final exam periods. If for some reason you are unable to be in the lab during your scheduled time, you are responsible for finding a replacement.

Professional Conduct

Instructors are to conduct themselves as professionals. While we do not have a dress code, neat attire will help set the right tone for a class. It is important to establish yourself as the leader of the class and not just another one of the students.

The Department expects that instructors will meet their fall and spring classes for the full time (either 50 minutes or 75 minutes) scheduled. Your course coordinator or the department head must be notified any time you are

unable to conduct class, attend help sessions, or office hours. They also need to be notified of all arrangements you have made to cover a class and class cancellation.

In the event that you are unable to conduct one of your assigned classes, help sessions, or office hours, you should make an effort to cover the class by making arrangements with another instructor. If this is not possible, you should contact your course coordinator or the department head giving sufficient time for them to make arrangements.
Permission must be obtained from Dr. Jager or Department Head, before canceling any class. Being absent from your assigned class to take personal vacation will not be tolerated.

Questions

If you have questions on the material you are teaching, on classroom procedures, exams, or other matters related to your teaching efforts, see the course coordinator or feel free to call on any faculty member. We are here to help you.

Drop/Add Enrollment Policy

Students are moved automatically from the top of the wait list to the class roster when vacancies occur. They are sent an email to that effect when this occurs, and the remaining students on the wait list are moved up (order on the wait list is determined by the time the student puts himself/herself on the list).

GTA's will not need to deal with this issue. You will still get an occasional student who begs to be admitted to the class. Tell them this decision is not in your hands. If the student appears to have an "extremely" compelling reason to be admitted to a full class, send them to the course coordinator to plead the case.

Office Procedures

Questions about the Department, Campus or University Procedures

Office personnel will do their best to answer any questions and give you any assistance they can provide. If there is a student worker in the office, please first direct your questions and requests to them. Please remember that office personnel have numerous duties and responsibilities within the department, so be considerate of all of their obligations when making requests of their time.

Office Equipment and Supplies

An electric stapler, heavy-duty long reach stapler, paper cutter, 2 and 3-hole-punch, scotch tape, masking tape, etc. are available in Room 101. You are welcome to use them, but do not remove them from the office. As with all areas within the department, please be considerate of others and clean after yourself to keep the area tidy.

Six laptops, two data projectors and one overhead projector are available for check-out from Room 101 for departmental usage on a first come/first served reservation basis. If you would like to reserve or use them please see the office personnel. Persons who have made reservations will have priority over walk-ins. When returning the laptops, please make sure that the machine is completely shut down and the battery is charged.

Laptops should not be removed from Kansas State University campus unless an "AGREEMENT TO USE KSU PROPERTY OFF CAMPUS" has been signed and authorized. Laptops are to be returned on a daily basis unless specific arrangements for additional time are documented with office personnel but will not exceed one week.

If you are using the department data projector, you must wait until the fan has stopped before turning off the projector or unplugging it. Failure to follow this procedure can result in damage to the lamp requiring replacement of the bulb. If you are teaching in Bluemont Hall, you can also reserve an overhead projector from their Media Center, which is located in Bluemont 16 or call 532-5926.

Office supplies (i.e. paper, dry erase markers, pens, folders, notebooks, etc.) are available in Room 101 for official departmental use. The department has limited budgeted resources available to meet the equipment and supply needs, please do not misuse these valuable resources and jeopardize departmental funding of these items in the future.

Copy/Scan and Fax Machine Use

Large copy machines available for departmental business use are located in rooms 101 and 108. If you have are unfamiliar with the operations of the machine, please ask a seasoned department student or office personnel for assistance. Very large copy jobs should always be coordinated with department office personnel. Any document required to be faxed will be processed by office personnel.

A small multi-function copy/scan/print machine is also provided for departmental business use only in Room 10. Please DO NOT print large jobs on this machine! The machines in Room 101 or 108 are available for jobs exceeding the limit posted in Room 10. If the machine needs paper, please carefully refill using the paper available near the machine but do not over fill the machine.

Keys

A Key card is available to any Statistics Major for the Stat Lab (Room 10). A building key is available only if you are in a paid department position. An office key will be provided to each person in a GTA or GRA position. All keys in your position are your responsibility, if lost, you will be required to pay for replacements. The cost is $15 per key card and $10 per key.

Departmental Journals and other Publications

Books, journals and past theses in D108 are provided to be used as references. If you would like to use these materials outside D108 put your name, date and item description on the sign-out sheet located in D108. When finished, return items to their original location and cross out your name. Please do not keep things more than 2 weeks as others may want to use it.

Seminars

Dickens 207 has been reserved weekly on Thursday afternoons at 4:00 for seminars. The department holds several seminars each semester, most of which are external invited speakers. Refreshments are served for departmental seminars 30 minutes prior to the seminar in D108.

Seminars are also given by our students. The procedure to follow to schedule a seminar is:

1. Coordinate with the seminar chair to select the time and date.
2. E-mail Bonnie at bmessme@ksu.edu to reserve a room if the seminar is not at the usual time and day.
3. Once the room is reserved, contact Jo Ann at jablack@ksu.edu at least two weeks before your seminar with the information on date, time, location, major professor, title and abstract. Jo Ann will post the announcement on the website, via email, and paper flyers.

Room Reservations

With departmental authorization a campus classroom can be reserved for appropriate departmental related purposes. These reservations must be made with the university's facilities department, Bonnie will make these room reservations for you. Please email bmessme@ksu.edu with all of the following information: your name, event date, beginning & ending times, building & room desired with at least one alternative location, number of people expected to attend and purpose of meeting.

STAT Lab (Refrigerator/Microwave/Mailboxes/Lockers)

A refrigerator and microwave are provided for your convenience in Room 10. Please mark any item with your name and date. You are expected to help keep them clean and remove all items that belong to you on a weekly basis. Any items left more than two weeks will be discarded without notice.

Mailboxes for all Graduate Students are provided in Room 10, please check and remove mail frequently.

Lockers are provided in Room 10 for your convenience. You are responsible for all items placed in these lockers. Feel free to provide a lock for additional security of items. The locker number and lock combination must be provided via e-mail to bmessme@ksu.edu. At the end of each semester, any lockers left with locks on them will have the lock removed and all items placed in lost and found, unless special request has been made to Bonnie.

Windows/Air Conditioners/Pest Management

DO NOT turn off the air conditioners in Room 10 or the GTA offices. If the temperature is too cool, please see Office personnel and they will work with you to adjust the temperature. Dickens Hall is an old building and the moisture that accumulates needs to be removed with these units to prevent mold from accumulating in the building.

Janitorial services for trash pick-up are set by the university in individual offices at only once a week. To prevent pest infestations, all food waste should be disposed of in a centrally located large covered trash can on each floor. Please place recyclable material in the blue recycle containers. If you have a problem with insects, rodents or bats please notify the office personnel immediately. Do not approach wild animals, if it is after hours please call campus police at 532-6412.

GTA Offices

If you have been assigned as a GTA you are responsible for keeping your assigned room neat and tidy. All paperwork with student information must be kept confidential and secure. If you do wish to secure exam papers past the end of the semester yourself, please see Dr. Jager or the office personnel for a storage envelope. Place all appropriate items in the envelope, sign, seal and return the envelope to the office and we will store appropriately and dispose of them after the required time.

Personal Mail

All out-going personal mail must have adequate postage applied and put in the “stamped” slot in the downstairs mailbox! Personal mail delivered to the department should be kept to a minimum due to limited university resources. If it is absolutely necessary to deliver to the department, packages delivered will be kept in the main office and you will be notified via e-mail.