APPLIED STATISTICS, PH.D.

The PhD program in Applied Statistics is a research intensive program designed for students who demand the utmost depth and understanding of statistical methods to solve applied problems with innovation. The techniques and skills that students learn prepare them to become professionals in a broad range of statistics-driven fields, from academia to research-based industrial settings.

The Applied Statistics faculty support students interested in a diverse range of statistical topics, including: linear models, data mining, statistical process control, statistical computing, nonparametric and robust methods, change and anomaly detection, and statistical network analysis.

Application

All students, both international and domestic, with relevant preparation in calculus, linear algebra, and statistics are welcome to apply. Prospective students without an M.S. degree in statistics or without proper preparation at the similar level are required to apply to our Master of Science program. We prefer that students begin their program in the fall semester. Application deadlines generally follow those of the Graduate School. Application materials must be submitted by January 15 for consideration for fall enrollment. Include two letters of recommendation from the most recent institution attended along with the transcripts. It is highly recommended that students apply early in order to be considered for the graduate student financial support.

Minimum Standards for Regular Admission

An applicant whose credentials meet both of the following minimum requirements may be considered for regular admission:

GPA Requirement
The applicant must have a grade point average, based on a 4.0 system, of at least 3.0 overall, at least 3.0 for the last 60 semester hours in a degree program, or at least 3.0 for a completed graduate degree program.

Entrance Exam Requirement
The GMAT is preferred, but students may choose to take either the GMAT or the GRE. GMAT: The minimum acceptable score is 650. GRE: The required minimum acceptable score is 310, including at least 150 on the verbal reasoning part and a writing assessment score of 4.0.

Language Requirement: All students whose first language is not English must submit an official TOEFL (Test of English as a Foreign Language) or an IELTS score. The minimum acceptable scores are 575 and 90, for TOEFL and IELTS, respectively. The language requirement may be waived for students with an US degree. In addition, student communication skills and preparation will be assessed in a short interview with the faculty.

Conditional Admission
An applicant whose credentials do not meet the requirements for regular admission may be considered for conditional admission if the applicant has a grade point average of at least 2.5 overall and an acceptable score on the appropriate entrance examination. An applicant may be considered for conditional admission if he or she meets EITHER the GPA requirement for regular admission (GPA of 3.0 or higher) OR the entrance examination score requirement for regular admission. These are minimum requirements.

Financial Support
Financial support is available on a highly competitive basis. A typical teaching assistantship provides a full tuition waiver and a $15,000 stipend for 9 months and assumes a weekly 20-hour teaching/recitation load. Additional summer support may be available for qualified candidates. Support may also be available at centers around the campus for statistical consultations.

Overview

Students typically take about four years to obtain a Ph.D. degree in Applied Statistics. Students are required to take 48 credit hours of coursework and 24 dissertation hours. During the summer months, students are expected to complete an independent research project and present obtained results as a report or a short paper. The interdisciplinary field coursework requirement can be fulfilled by taking 12 out of the 48 required hours of coursework in a maximum of two fields from a list of approved courses in mathematics, computer science, management science, industrial engineering, finance, and some other areas.

Qualifying Exam

At the end of the first academic year, Ph.D. students are required to take a written qualifying examination. The exam is usually administered in early May and the typical course coverage includes ST 552 Applied Regression Analysis, ST 553 Applied Multivariate Analysis, ST 554 Math Statistics I, ST 555 Math Statistics II, ST 560 Statistical Methods, and ST 561 Applied Design Experiments.

Comprehensive Exam

Within one year after passing the qualifying exam, Ph.D. students are required to take a written comprehensive exam. The exam covers all courses included in the qualifying exam as well as courses taken afterwards, during the second year of studies. Typical coursework in the second year includes ST 575 Statistical Quality Control, ST 603 Advanced Inference, ST 610 Linear Models, ST 615 Theory of Regression, ST 635 Nonparametric Statistics, and ST 640 Statistical Computing. The comprehensive exam is usually administered in early May.

Dissertation

By the end of the second year of studies, Ph.D. students are expected to form a dissertation committee including choosing a dissertation adviser. They must identify a topic and successfully defend a written research proposal. The research proposal defense should typically take place at the beginning of the third year of studies.

Writing a dissertation is the final test of the development of research skills. It requires a deep understanding of the relevant literature and methodology as well as the ability to think and work independently. A dissertation must be some original contributions to the literature. A Ph.D. candidate is required to defend, at the final oral examination, his/her dissertation, a written document acceptable to the dissertation committee and to the Graduate School. The defense usually takes place at the end of the fourth year. Before graduation, Ph.D. candidates are required to have papers submitted to peer-reviewed journals and make presentations at seminars and conferences.

Overview

Students typically take about four years to obtain a Ph.D. degree in Applied Statistics. Students are required to take 48 credit hours of coursework and 24 dissertation hours. During the summer months, students are expected to complete an independent research project and present obtained results as a report or a short paper. The interdisciplinary field coursework requirement can be fulfilled by taking 12 out of the 48 required hours of coursework in a maximum of two fields from a list of approved courses in mathematics, computer science, management science, industrial engineering, finance, and some other areas.

Qualifying Exam

At the end of the first academic year, Ph.D. students are required to take a written qualifying examination. The exam is usually administered in early May and the typical course coverage includes ST 552 Applied Regression Analysis, ST 553 Applied Multivariate Analysis, ST 554 Math Statistics I, ST 555 Math Statistics II, ST 560 Statistical Methods, and ST 561 Applied Design Experiments.

Comprehensive Exam

Within one year after passing the qualifying exam, Ph.D. students are required to take a written comprehensive exam. The exam covers all courses included in the qualifying exam as well as courses taken afterwards, during the second year of studies. Typical coursework in the second year includes ST 575 Statisti Quality Control, ST 603 Advanced Inference, ST 610 Linear Models, ST 615 Theory of Regression, ST 635 Nonparametric Statistics, and ST 640 Statistical Computing. The comprehensive exam is usually administered in early May.

Dissertation

By the end of the second year of studies, Ph.D. students are expected to form a dissertation committee including choosing a dissertation adviser. They must identify a topic and successfully defend a written research proposal. The research proposal defense should typically take place at the beginning of the third year of studies.

Writing a dissertation is the final test of the development of research skills. It requires a deep understanding of the relevant literature and methodology as well as the ability to think and work independently. A dissertation must be some original contributions to the literature. A Ph.D. candidate is required to defend, at the final oral examination, his/her dissertation, a written document acceptable to the dissertation committee and to the Graduate School. The defense usually takes place at the end of the fourth year. Before graduation, Ph.D. candidates are required to have papers submitted to peer-reviewed journals and make presentations at seminars and conferences.