Statistics and Biostatistics Graduate Program

PhD Program Description

1. Formal Credit Requirements.

Ph.D. candidates must ordinarily have at least 72 semester-hours of approved graduate credits. This will generally consist of 48 hours of course credits and the remainder of the 24 hours as research credits. Ph.D. students are urged to spend at least one full academic year in residence on campus, although there is no formal residency requirement.

2. Language Requirement. All Ph.D. candidates are required to demonstrate an acceptable proficiency in one foreign language relevant to their field. The student may choose from among the following: French, German, Japanese, Russian, Spanish, or Computer Language. The candidate should seek advice as to what language to study to help them in their research.

3. Transfer of Credits. Up to 30 credits of such acceptable credits may be permitted to be applied for the Ph.D. degree. This is subject to individual consideration.

4. A Guide for Courses and Electives for Ph.D. in Applied and Mathematical Statistics.

Required Courses:
587 Interpretation of Data II
592 Theory of Probability
593 Theory of Statistics
652-653 Advanced Theory of Statistics I and II
663 Regression Theory
680-681 Advanced Probability Theory I and II
Two additional 600 level courses in Statistics
693 Current Topics in Statistics, 3 semesters

Electives:
540-541 Quality Control I and II
542 Life Data Analysis
545 Statistical Practice
553 Categorical Data Analysis
554 Applied Stochastic Processes
555-655 Nonparametric Statistics & Advanced Nonparametric Statistics
563 Regression Analysis
565 Applied Time Series Analysis
567 Applied Multivariate Analysis
575 Acceptance Sampling Theory
576 Survey Sampling
584-585 Biostatistics I and II
586 Interpretation of Data I
588 Data Mining
590-591 Design of Experiments & Advanced Design of Experiments
595 Intermediate Probability
654 Stochastic Processes
664 Advanced Topics in Regression and Analysis of Variance
667 Multivariate Analysis
687-688 Seminar in Applied and Mathematical Statistics
689 Sequential Methods
690-691 Special Topics (topics on rotating basis): Large Sample Theory, Time Series
Bayesian Statistics, Robustness, Sequential Analysis.

5. Research Requirements.

The degree of Doctor of Philosophy is conferred in recognition of marked ability and scholarship in a broad field of knowledge and of high

scholastic attainment and original research in a special area of the general field. It is primarily a research degree and is not conferred solely as the result of the completion of a series of prescribed courses. A basic requirement for the Ph.D. in Statistics is the preparation of an acceptable thesis summarizing the results of original research work relevant to Statistics. This work will be carried on with the general guidance and under the supervision of the candidate's Major Professor.

6. Fields of Specialization Available. Areas of specialization for research include: statistical inference, estimation theory, hypothesis testing, decision theory, empirical Bayes and Bayes methods, regression analysis, analysis of variance, statistical computing, experimental design, multivariate analysis, nonparametric statistics, sequential analysis, quality control theory, time series analysis, applied probability, stochastic processes, and probability theory.

7. Examination Requirements. A precondition to being formally admitted as a Ph.D. candidate is that the student pass the Ph.D. Examinations, the purpose of which is to determine the breadth of the student's mastery of their major and minor fields. This exam is both written and oral. For more details, see the attached sheet on Ph.D. Exams. A final oral examination, after completion of the doctoral dissertation, must also be successfully completed.

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Hill Center, Busch Campus

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