Doctor of Philosophy in Engineering and Applied Science (Math)

A doctoral program in Engineering and Applied Science, administered through the College of Science and Engineering is available to the students in the Department of Mathematics and Statistics. The Department of Mathematics and Statistics offers the following concentration options: Mathematics, Applied Mathematics, and Statistics.

Admission Requirements
In addition to the Graduate School Admission requirements, acceptance into the Mathematics, Applied Mathematics, and Statistics concentration requires the following:

Mathematics
• Completed or in the process of completing a master’s degree in mathematics, statistics, engineering, applied science or related field.
• Score 60th percentile or better in the quantitative section of the Graduate Record Examination (GRE).

Applied Mathematics
• Completed or in the process of completing a master’s degree in mathematics, statistics, engineering, applied science or related field.
• Score 60th percentile or better in the quantitative section of the Graduate Record Examination (GRE).

Statistics
• Completed or in the process of completing a master’s degree in mathematics, statistics, engineering, applied science or related field.
• Score 60th percentile or better in the quantitative section of the Graduate Record Examination (GRE).

General Admission Requirements
If all requirements are not met, the Department of Mathematics and Statistics may choose to admit the candidate to "Classified (with performance requirements)" status. Applicants admitted as "Classified (with performance requirements)" status will be required to rectify any deficiencies determined by the student's Program Director (or Coordinator) and the Chair of the Department. The candidate must submit: 1) all college/university transcripts; 3) GRE scores; 3) three letters of recommendation; 4) a one-page statement including research/career interests and goals as well as a preferred area of concentration; and 5) a resume or curriculum vitae.

Course Requirements
The Ph.D. Advisory Committee will guide the student in establishing their Program of Study based upon the student’s background and research interests to satisfy doctoral-level coursework. In addition, the committee will evaluate the level of the student’s preparation in their area of research as well as the background in their sub-disciplines needed to successfully complete courses toward a PhD.

In addition to the Graduate School requirements, the Department of Mathematics and Statistics requires the following:
• Of the minimum of 18 credits needed for a PhD, at least 6 credits must be in areas outside the main area of research.

• Minimum of 2 credits and maximum of 4 credits of colloquium must be taken by each student.
• The student must give at least one colloquium presentation on the dissertation topic and at least one additional colloquium presentation on a topic other than the thesis work.

A minimum of 9 credits per semester is required in order for a student to qualify as a full-time graduate teaching/research assistant (GTA GRA).

Research Requirements
A substantial original research work is required to complete the doctoral studies. The dissertation must meet the following requirements:
• Contain results of relevant and original research approved by the student’s Advisory Committee, and formatted according to the guidelines of the Graduate School;
• Demonstrate student’s mastery of the chosen research subject by designing and conducting research;
• Demonstrate student’s creativity, critical thinking, and problem-solving skills;
• Demonstrate student’s ability to investigate independently, and to discuss and articulate mathematics and/or science problems to their peers;
• Contribute to the mathematical profession and/or scientific knowledge.

Dissemination Requirement
One of the following is required at the time of Dissertation defense:
• At least one article submitted to a peer-reviewed journal.
• At least one presentation is given to a national or international peer-reviewed conference. The type of presentation must be approved by the advisor.
• At least one article accepted to a peer-reviewed conference proceeding.

The disseminated work must be related to the dissertation. The student must take a primary role in the dissemination (as gauged by the advisor).