



Graduate Academic Learning Compact

Mathematical Science

Program Mission Statement

The mission of the graduate program of the Department of Mathematics and Statistics is to provide an excellent education for as in mathematics and statistics, to focus scholarly efforts on expanding our knowledge of those two disciplines, and to participate in activities that promote mathematics and statistics in relevant ways. Our programs prepare students for high-level quantitative careers and for discipline-related Ph.D. programs. Our courses are designed to immerse students in graduate-level mathematics and statistics and to promote independent thinking in students. We strive to instill in students who interact with us an appreciation for the power of mathematics and statistics and a desire to be lifelong learners and practitioners in mathematics or statistics. Graduate Faculty are to engage in research projects that yield new results in their areas of expertise or that apply their knowledge to solve problems of interest to scholars in other disciplines. Graduate Faculty are also to be involved in meaningful professional service to the university and the disciplines regionally, nationally, and internationally. All of our endeavors will be subject to self-reflection designed to maximize their effectiveness.

Student Learning Outcomes

Graduates will be able

Independent Learning/Scholarship

- Be able to conduct independent investigations that enhance and extend course content.

Content/Discipline Knowledge

- 2. Solve statistics and computer problems by
 - a. Recognizing and applying principles from statistics to solve theoretical and applied problems
 - b. Recognizing and applying techniques of computer science to solve applied problems.

Communication (Optional)

- Gain experience in communicating mathematics to an audience of peers and/or professors.

Knowledge of Literature of Discipline (req)

- 1. Solve pure and applied mathematics problems by
 - a. recognizing and applying principles of abstract mathematics to solve complex problems.
 - b. recognizing and applying principles of applied mathematics to solve complex problems.
 - c. composing coherent and correct proofs
 - d. creating mathematical models to solve problems

- In addition to the usual contents of the program courses, the program requires that candidates read articles and chapters in book that are natural extensions of the course materials.

Professional Skills

- Be prepared to enter high-level quantitative careers and/or Ph. D. programs.

Assessment Approaches

Candidates in the Master of Science with concentration in Mathematics or Statistics are assessed in the following manner: In required courses and Comprehensive exams, the candidates will be assessed by means of written exams using individual faculty rubrics. Thesis or non-thesis oral presentations are assessed using agreed upon department rubrics. Each candidate for Master of Mathematical sciences has the option of completing a thesis and an oral presentation or non-thesis investigation and an oral presentation. In the thesis, the candidates apply relevant research theories and skills developed throughout the program to investigate question(s) relevant to moving the body of knowledge pertaining to mathematics sciences forward (Knowledge). The candidate will also demonstrate their knowledge of the investigated question(s) through an oral presentation

(Communication). In the non-thesis option the candidate investigates topic(s) not normally covered in courses throughout the program and give an oral presentation on the investigated topic(s) (Communication). In addition the non-thesis candidates are required to take a comprehensive exam (Logical and Critical Thinking).