

MATHEMATICS EDUCATION, PHD

Contact

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Faculty

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Program Description

The School of Education, in cooperation with the Department of Mathematics, in the College of Arts and Sciences, offers a Ph.D. degree in Mathematics Education. The program is designed for students who have demonstrated a high level of mathematical capability and are committed to full-time graduate study. It emphasizes preparation for academic positions in three areas:

- Research on the teaching and learning of mathematics.
- Teacher preparation and professional development.
- Teaching mathematics education at the college level.

Student Learning Outcomes

1. Explain foundational knowledge of mathematics education history, theories, research, and instructional practice
2. Synthesize understanding of a topically-focused body of mathematics education literature
3. Model a reflective stance toward the teaching and learning of mathematics
4. Model an advocacy and leadership oriented professional identity
5. Demonstrate varied expertise as a mathematics educator, including undergraduate and graduate teaching, field supervision, advising and mentoring
6. Conduct publishable original mathematics education research

Ph.D. in Mathematics Education

Successful completion of the doctoral program typically requires three to four years of study beyond the master's degree. Each student's program of study is tailored to fit the individual's background, professional experience, and career goals and to satisfy degree requirements.

Most doctoral students earn the majority of their mathematics education credits by working closely with the mathematics education faculty in courses, independent study projects, and internships. Students are encouraged to develop strong backgrounds in mathematics, research design and methods, and learning theories.

Course Requirements

Students complete a minimum of 90 graduate credits beyond the baccalaureate degree, including the following:

- at least 48 credits in mathematics (MAT), mathematics education (MTD), and other education courses;
- at least 12 credits of research methods and/or other scholarly inquiry courses; Recommended sequences:

Code	Title	Credits
Qualitative emphasis		
EDU 603	Introduction to Qualitative Inquiry	3
EDU 791	Advanced Seminar in Quantitative Research Methods I	3
EDU 810	Advanced Seminar in Qualitative Research I	3
EDU 815	Advanced Seminar in Qualitative Research II	3
Quantitative emphasis		
EDU 603	Introduction to Qualitative Inquiry	3
EDU 791	Advanced Seminar in Quantitative Research Methods I	3
EDU 737	Quantitative Research Design	3
EDU 886	Multivariate Research Methods	3
EDU 888	Structural Equation Modeling and Factor Analysis	3

- EDU 781 Addressing Systemic Racism in Education

Other Requirements

- preliminary exams (written questions followed by an oral exam);
- qualifying exams (written questions followed by an oral exam, a research presentation at a professional conference, and submission of a paper for publication);
- a research apprenticeship (after successful completion of preliminary exams); and
- dissertation work (9-24 credits),
- participation in MTD 830 Research Seminar in Mathematics Education (faculty and doctoral students discuss and present research in the field)

Special Opportunities

Students have the opportunity to work with faculty members through internships in conjunction with the following courses:

Code	Title	Credits
EED 423	Intermediate Grade Mathematics Methods and Curriculum	3
SED 413/613	Methods and Curriculum in Teaching	3
MAT 117 & MAT 118	Foundational Mathematics via Problem Solving I and Foundational Mathematics via Problem Solving II	6

Financial Assistance

The majority of full-time students in this program are supported by assistantships, awarded by either the Department of Mathematics or the School of Education's Teaching and Leadership Department. Research assistantships are awarded through mathematics education faculty grants.

Financial awards are also available from the Graduate School or School of Education competitive scholarship, for qualified students. The application processes for these awards are described on the Graduate School or School of Education website.

Students may contact the program coordinator for more information.