

Opportunities in Mathematical Studies AT SIUE:

MATH EDUCATION

Career Outlook

The prosperity of a nation in today's global economy depends on scientific and technological strength, which in turn is built upon the foundation of mathematical education. To maintain our competitive edge in a world economy, our nation will need more dedicated mathematics teachers. Not only is mathematics teaching vital to our society, but it also can be a very satisfying career – for nothing is more rewarding than helping a young mind grow.

The Department of Mathematics and Statistics offers programs leading to the Bachelor of Science or Bachelor of Arts degrees for mathematics teachers. These are four-year programs that grant certification to teach in junior and senior high schools. They include work in general education, professional education, and mathematics.

Successful mathematics teaching is complex. It requires, among other things, knowledge of mathematics combined with an understanding of the impact that socioeconomic background, culture heritage, and attitudes and beliefs have on the learning environment. This program provides such a foundation for the development of highly trained mathematics teachers. It is staffed by mathematicians and mathematics educators who, as role models, contribute to the evolving vision of what mathematics is and how it is learned.

Educational Preparation

To be admitted to the mathematics and statistics program, a student must satisfy the requirements for admission to a program in the College of Arts and Sciences and must satisfy one of the following:

1. Complete MATH 120 and 125 or mathematics courses having these courses as prerequisites (or equivalent courses at another accredited institution of higher education), have a GPA of 2.0 or higher in all college Mathematics, and have a GPA of 2.0 or higher in all college courses taken.
2. Complete, in high school, seven semesters of college preparatory mathematics including a course in trigonometry, and have no semester grade lower than a C in those courses. High school deficiencies and AD (academic development) courses must be completed before admission.

Typical Program of Study

Math. Education

| Freshman Year | Semester Hours |
|---|----------------|
| MATH 150 – Calculus I | 5 |
| ENG 101 – Composition..... | 3 |
| General Education..... | 3 |
| SPC 103, 104, or 105..... | 3 |
| | 14 |
| MATH 152 – Calculus II..... | 5 |
| CS 140 – Introduction to Computing I..... | 4 |
| ENG 102 - Composition..... | 3 |
| PHYS 211a - Univ. Physics..... | 4 |
| PHYS 212a - Univ. Physics Lab..... | 1 |
| | 17 |
| Sophomore Year | |
| MATH 250 – Calculus III | 4 |
| MATH 223 – Logic & Math. Reasoning..... | 3 |
| General Education | 9 |
| | 16 |
| MATH 350 – Int. to Analysis | 3 |
| MATH 321 – Elementary Linear Algebra..... | 3 |
| CI 200 – Introduction to Education..... | 2 |
| General Education | 9 |
| | 17 |
| Junior Year | |
| MATH 320 – Int. to Abstract Algebra..... | 3 |
| STAT 380 – Statistics for Application..... | 3 |
| EPFR 305 - Educational Psychology..... | 3 |
| MATH, STAT, or OR Electives..... | 3 |
| General Education | 6 |
| | 18 |
| MATH 400 – Development of Modern Math..... | 3 |
| EPFR 320 - Foundations of Education..... | 2 |
| EPFR 321 – Education in Multicultural Sc..... | 1 |
| CI 440 - Teaching Secondary School..... | 3 |
| General Education..... | 6 |
| | 15 |
| Senior Year | |
| MATH 311 – Teaching Secondary Math. | 3 |
| MATH 435 – Foundations of Geometry | 3 |
| MATH 498 – Senior Seminar..... | 2 |
| SPE 400 – The Exceptional Child..... | 3 |
| CI 315a – Methods of Teaching in Secondary..... | 2 |
| MATH, STAT, or OR Electives..... | 3 |
| | 16 |
| CI 315b – Methods of Teaching in Secondary..... | 2 |
| CI 352 – Student Teaching..... | 10 |
| MATH 499 – Senior Project..... | 2 |
| | 14 |
| Total hours for graduation | 124 |

Faculty

All 20 full-time faculty members in the Department of Mathematics and Statistics hold doctorates. Some have practical experience in industry and government. Our faculty members are scholarly active publishing their work in professional journals and presenting results at numerous international and national conferences. For their activities they received both external and internal research grants and scholarship awards. Several of the faculty members hold leadership positions in professional organizations and editorial boards. Five faculty members have received Teaching Excellence Awards or Teaching Recognition Awards.

Scholarships and Awards

The Office of Student Work and Financial Assistance administers several federal, state and institutional financial aid programs, including scholarships, grants and loans. Early application is advised.

Facilities

Modern computer facilities are extremely important to most mathematical scientists and probably will be more important in the future. In recognition of this fact, all mathematics majors must learn a computer programming language and are encouraged to use computers. Math students have access to more than 500 state-of-the art PCs in over a dozen computer labs on campus. SIUE has site licenses for several popular mathematical software packages, including Mathematica, MATLAB, SAS, and Minitab. The University's Lovejoy Library includes extensive collections of periodicals and books about mathematics and statistics.

Graduate Study

Undergraduate majors in the Department of Mathematics and Statistics are encouraged to prepare for a graduate study at SIUE or elsewhere. Students may earn a master's degree in mathematics with a specialization in one of several areas of interest at SIUE.

To Learn More ...

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