

Master of Natural Science (MNS)

At Southeast, you will not just learn mathematics, you will do mathematics! The Department of Mathematics offers the Masters of Natural Science degree with an option in Mathematics. The program requires at least 32 credit hours of coursework in addition to the completion of a thesis or a comprehensive examination and graduate paper. In addition to coursework in mathematics, all students are required to take 6 credit hours in a complementary area outside of mathematics. Some options include education, business or cybersecurity.

We emphasize close interaction with faculty and small class sizes. The program is structured to provide students with breadth and depth to prepare them for industry, teaching or continuing graduate work. As a Masters of Natural Science student in Mathematics, you will learn from an active group of highly dedicated teachers and scholars with interests in pure and applied mathematics and mathematics education. Our faculty have specialties in actuarial science, algebra, algebraic geometry, combinatorics, complex analysis, cryptography, differential equations, geometry, graph theory, number theory, statistics and topology.

Many students also receive graduate assistantships which offer 9 credit hours of tuition during fall and spring semesters with 6 credit hours during the summer semester. Assistantships also carry a stipend for the academic year.

Mathematic students will...

- Gain depth in the core areas of algebra, analysis, and topology
- Have the opportunity to tailor coursework to individual goals and interests
- Have access to modern computer labs and the opportunity to use computers to produce mathematical results
- Have the opportunity to present mathematical results to mathematicians within the department and at conferences
- Produce an original thesis or graduate paper containing significant mathematical results

Internship and Employment Opportunities of Recent Graduates/ Graduate Schools and Programs of Recent Graduates

- High School Teachers
 - Marquette High School
 - Pattonville High School
- College Instructors
 - St. Charles Community College
 - Lindenwood University
 - Mineral Area College
 - John A. Logan College
- Ph.D. Candidates
 - North Texas
 - University of Illinois-Chicago
 - Southern Illinois University-Carbondale
 - University of Missouri-Columbia
- Account Administrator/Financial Analyst at Lockton Companies-St. Louis
- Senior Software Developer at Election Administrators-St. Louis

Admission Requirements

1. An undergraduate GPA of 2.5 on a 4 point scale
2. Minimum GPA of 2.75 on a 4 point scale for the last 30 semester hours of undergraduate science and math courses.
3. Two letters of recommendation addressing the applicant's potential for academic success in the respective area of emphasis. Letters should be addressed to the Director of Admissions.
4. Completion of a major in mathematics or completion of the following courses with a grade of 'C' or better in each course and a 3.0 GPA on a 4 point scale for these courses: Standard calculus sequence; Linear Algebra; Abstract Algebra; Nine additional hours of post-calculus courses. (An applicant who is no more than two courses short of meeting these requirements may be admitted on a provisional basis.)

Special Options with Mathematics**Program:**

- Available via ITV
- Select courses offered online during the summer

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This is a guide based on the 2016-2017 Graduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on factors such as dual enrollment, remediation, and summer enrollment. Students meet with an academic advisor each semester and use DegreeWorks to monitor their progress.

CURRICULUM CHECKLIST

Required Courses – 32 hours
(Minimum of 16 hours must be at the 600 level)

MA 560 Research Methods (3)

Analysis Requirement – Choose two courses:

MA 546 Advanced Calculus I (3)*

MA 635 Topology (3)

MA 647 Complex Analysis (3)

Algebra/Geometry Requirement – Choose one course:

MA 642 Groups and Fields (3)

MA 644 Rings and Modules (3)

Choose one course:

MA 632 Foundations of Geometry (3)

MA 633 Differential Geometry (3)

MA 643 Number Theory (3)

Complementary Area - 6 graduate level hours from a department outside Mathematics. These courses should be chosen in close consultation with the graduate advisor.

11 Hours of Electives/Thesis

Each student must either write a thesis or sit for comprehensive exams.

**required of all students who did not take course as an undergraduate.*

GR 603 Seminar in College Teaching is required of all students awarded a Graduate Assistantship.

Sample Two Year Schedule:

Fall

MA 625 – Applied Regression Analysis

MA 642 – Groups and Fields

GR 603 – Seminar in College Teaching*

Spring

MA 545 – Linear Algebra and Matrices

MA 635 – Topology

Summer

SE 617 – Foundations of Educational Technology

MA 538 – History of Mathematics

Fall

MA 546 – Advanced Calculus I

MA 560 – Research Methods in Mathematics

Spring

MA 633 – Differential Geometry

MA 694 – Thesis

Degree Requirements

Thesis Option - The student must write a thesis involving original mathematical research with an advisor and will enroll in MA 694 - Thesis. The student will give an oral defense of the thesis to a committee consisting of at least the thesis advisor, a second member of the Mathematics faculty and one faculty member from outside the department of Mathematics.

Non-Thesis Option - If the student does not write a thesis, the student must write a graduate paper on a topic chosen in consultation with an advisor and give a presentation on it to the department. In addition, the student will sit for a three-hour Comprehensive Examination covering topics from the student's course work.

Time Limit: The student must finish all degree requirements within 6 years of the start of the degree.