Master of Science in Mathematics

College of Arts and Sciences

Learn the knowledge and skills you need for both current and future job markets with an M.S. in Mathematics from Governors State University. With this degree, you will master two of the most valued workplace attributes - the ability to think critically and to solve problems.

FACT

Employment of mathematicians is expected to increase at a faster than average rate when compared to all occupations. Employment of mathematicians is expected to increase by 23 percent over the 2012-2022 period, which is much faster than the average for all occupations.
Source: U. S. Department of Labor. Occupational Handbook for 2014-2015

Outstanding Preparation

The graduate mathematics program qualifies you for a careers using mathematics. The program emphasizes problem solving and mathematical inquiry. Coursework covers a wide range of mathematics including abstract algebra, probability and statistics, combinatorics, advanced calculus, the history of mathematics, financial mathematics, and mathematical modeling, while emphasizing both the applied and theoretical aspects of these disciplines. The use of the most current mathematics technology will help you analyze and solve problems like an experienced mathematician.

Unlimited Opportunity

You will be prepared for high demand careers with coursework in analysis, calculus, geometry, financial mathematics, and statistics. Mathematicians are employed by the Federal Government, primarily in the U.S. Department of Defense; and in the private sector in insurance, scientific research, development services, management, and technical consulting services such as physics, statistics, engineering, and operations research; and in education at the community college and high school levels.

Faculty Advisor:

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Faculty Advisor
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Special Admissions Requirements

In addition to the university admissions requirements, students must:

- Have a cumulative undergraduate grade point average of 2.75 (out of a possible 4.0). Students seeking admission to the GSU Master of Science in Mathematics program with a GPA lower than 2.75 may petition to the graduate program coordinator for admission.
- submit a letter of application including a statement of personal interest in pursuing a master's degree in mathematics,
- submit three professional or academic letters of reference

Students may apply for the Master of Science in Mathematics program at Governors State University with a baccalaureate degree in any field from an accredited university. An undergraduate major in mathematics, actuarial science, engineering, business, science, or computer science is recommended. Students must have completed, with a grade of "C" or higher, a three-semester sequence in calculus, a course in modern algebra, a course in linear algebra, and a course in analysis. Students may be conditionally admitted if they do not meet the undergraduate prerequisites for the graduate core courses.

Admission to Candidacy

As a benchmark toward graduation, students must apply for and be accepted to candidacy for the Master of Science degree in Mathematics. Mathematics students must apply for candidacy upon completion of 18 credit hours (6 of these credit hours must be in the Required Core Courses). Students applying for candidacy to graduate with the Master of Science degree in Mathematics must meet the following requirements:

1. Completion of a minimum of 6 hours in the required core, with a grade of "B" or better in each course;
2. Completion of a minimum of 12 additional hours of core or electives course work with a grade average of "B" or better, and no more than one course with a grade of "C" will be accepted; and
3. Establish a Graduate Committee. The Graduate Committee must include a project advisor (must be a tenured/tenure track Mathematics Faculty) and two other graduate faculty (one of which must be a faculty member from a graduate program in a related discipline or graduate program at Governors State University). A Graduate Committee may contain one outside member, who must be a tenured or tenure-track professor from a graduate program at an accredited university. Students apply for candidacy by completing a "Master of Science in Mathematics Program Application for Candidacy" form, including the student's courses and grades to date, date of intended graduate thesis/project/seminar, and a statement from the student's advisor regarding the student's prospects for completion within four years. The Master of Science in Mathematics Program faculty will review the application and vote on whether the student is admitted to candidacy, if additional coursework is required, or if the student will not be admitted to candidacy. Students who are denied admission to candidacy may appeal this decision to the College of Arts and Sciences Dean's Office.

Minimum Degree Requirements

In addition to the requirements for candidacy outlined above, Master of Science in Mathematics students must complete the following requirement in order to attain the Master's degree:

- the remaining elective courses such that the grade average for all elective courses is a "B" (3.00 of 4.00) or better, no more than one course with a grade of "C" will be accepted, and no grades below a "C" will be accepted; and
- the graduate thesis/project (MATH - 8900) or graduate seminar (MATH - 8950) and presentation (MATH - 8990) with a Pass ("P") grade, which is determined by a vote of the three-member graduate project committee.

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Required core courses (15)

Students must complete the following

MATH - 6449 Linear Algebra II (3)
MATH - 6451 Modern Algebra (3)
MATH - 8117 History of Mathematical Ideas (3)
MATH - 8505 Advanced Probability (3)
MATH - 8623 Mathematical Modeling (3)

Electives (15)

Students must also complete 15 hours of electives selected from any of the following courses. Students may also take courses in different areas with the program coordinator's approval.

MATH - 6229 Advanced Calculus (3)
MATH - 6337 Modern Geometry (3)
MATH - 6373 Topology (3)
MATH - 6637 Mathematics Laboratory (3)
MATH - 7121 Combinatoric and Graph Theory (3)
MATH - 7211 Advanced Calculus for Educators (3)
MATH - 7369 Differential Geometry (3)
MATH - 8219 Topics in Analysis (3)
MATH - 8243 Partial Differential Equations (3)
MATH - 8523 Financial Mathematics (3)

Additional Electives

Up to 6 hours of courses from related disciplines may be substituted for the elective courses with approval of the program coordinator including the courses below:

CPSC - 6562 Numerical Algorithms (3)
CPSC - 6660 Artificial Intelligence (3)
CPSC - 8810 Formal Languages and Automata (3)
CPSC - 8815 Natural Language Processing (3)
Finance
Economics

Required graduate thesis/project/seminar (4)

Students must complete a graduate thesis, project or seminar as part of a capstone course. Students can select one of the following options:

Master's Thesis/Project Option

A paper describing and synthesizing material from several papers on a selected topic of interest from mathematics, including, but not limited to, pure or applied mathematics, mathematics education, statistics, history of mathematics, mathematical computing, or financial mathematics. The thesis/project must be approved by three faculty members, one of which is the project director. A tenured/tenure track mathematics faculty member must serve as the director of each thesis/project, and each thesis/project must be reviewed and graded by a committee of three faculty members. In addition, students will be required to present their work to the mathematics community at GSU.

Master's Graduate Seminar Option

Students participate in a seminar class, deeply investigating a topic in mathematics, mathematics education, statistics, history of mathematics, mathematical computing, or history of mathematics. The seminar topic will provide evidence of the ability to understand and synthesize the chosen topic. A Student Study Plan must be submitted to a tenured/tenure track faculty member who will serve as the supervisor of the seminar. This Student Study Plan must be reviewed and approved by a committee of three faculty members. The seminar must be open to the mathematical community at GSU, and seminar documentation must be submitted to the supervisor.

MATH - 8900 Graduate Thesis Project (3)
OR
MATH - 8950 Graduate Seminar (3)

AND
MATH - 8990 Research Presentation (1)

Total graduate coursework with thesis/project/ seminar - 34 credits

2016 – 17 Catalog Year