

**MASTER OF SCIENCE IN MATHEMATICS –
APPLIED MATHEMATICS, STATISTICS AND OPERATION RESEARCH
SCIENCE BUILDING 212D
773-442-5783**

Program Overview

The M.S. in Mathematics is designed for those with a strong undergraduate background in mathematics who wish to better prepare themselves for careers in applied mathematics or in the teaching of mathematics. The program is designed so that the student can concentrate in an area of Applied Mathematics, Statistics, Operations Research or in Teaching of Secondary Mathematics. For the latter concentration, students may earn up to 12 hours of course work in education, and apply them toward secondary teaching certification. Courses are scheduled to accommodate the evening student.

Admission Requirements

Students must fulfill the requirements for admission to the Graduate College. The student must have a standard calculus sequence and 6 undergraduate courses after calculus. A “B” average is required in these six courses. A student with four or more of these courses may be admitted conditionally at the discretion of the advisor. For the student who is less well prepared, additional course work must be taken before admittance to the program.

In the case of the Applied Mathematics, Statistics, and Operations Research program, the above mentioned 6 undergraduate courses must include at least two of the following or their equivalent: Ordinary Differential Equations I (Math 301), Introduction to Numerical Analysis (Math 304), Probability and Statistics (Math 305), Advanced Calculus: Multi-Variable (Math 339).

Degree Requirements

All students in the M.S. program must meet the following requirements. In addition, students must meet the requirements of their concentration.

The program consists of 10 courses (30 credit hours) selected according to the concentration. At least seven of the courses must be at the 400 level. Up to six hours of graduate transfer credit may be applied to the program with the approval of the Graduate College and the Department of Mathematics.

Students are cautioned that at most THREE 300-level courses may be applied to meet the degree requirements. As a consequence, students needing more than THREE 300 level courses may have to take more than 30 credit hours to complete the program. In addition, students are expected to be familiar with at least one mathematics or statistical computer package, such as Maple, Matlab, SPSS, SAS etc.

The student's complete program must be approved by the advisor.

Candidacy

All students are expected to apply for candidacy, after having successfully completed 12 credit hours with a GPA of at least 3.0.

Project /Thesis (Applied Mathematics, Statistics and Operations Research)

Each student must carry out a three credit hour project OR a six credit hour thesis, supervised by a faculty advisor. In order to register for the project course Math 495, students must have previously PASSED at least one of the written comprehensive examinations (see below) and must submit a signed topic approval form.

A student may request to write a 6 credit hour thesis (Math 494) in lieu of the project in mathematics (Math 495). Such requests can only be granted with permission from the MS Committee and a thesis supervisor. Moreover, to fulfill graduation requirements, in this case, the student will need to have completed at least four and not five 400 level courses from the additional course list.

Upon completion of the project/thesis, students must submit an approved written report and give an oral presentation. Detailed project/thesis requirements may be obtained from the program advisor.

Comprehensive Exam (Applied Mathematics, Statistics and Operations Research)

Each student must pass TWO written qualifying examinations covering selected areas from the graduate program. A list of test topics and sample examination questions may be obtained from the program advisor or the mathematics office. Students are urged to take the qualifying examinations early in their program. Each examination may be attempted at most three times. It is also expected that students pass at least one comprehensive examination before applying for candidacy.

Note: Students who can submit documentation showing they have passed examinations 1 and 3 of the actuarial board examinations do not need to take the departmental comprehensive examinations.

Courses (Applied Mathematics, Statistics and Operations Research)

The following TWO courses are REQUIRED for all students:

Math 430 Discrete Mathematical Structures and
either

Math 495 Project in Mathematics or Math 494 Thesis in Mathematics

Note: Math 430 (Discrete Mathematical Structures) and Math 495 (Project in Mathematics), may not be satisfied by transfer credit. Math 430 should be taken as early as possible in the program, while Math 495 is generally taken towards the end and requires the approval of the program advisor for registration.

plus AT LEAST FIVE courses from the following list:

Math 406 Linear Programming Theory and

Math 441 Multivariate Statistical Analysis

Math 442 Applied Regression Analysis

Math 443 Experimental Design

Math 465 Advanced Topics in Numerical Analysis

Math 469 Advanced Topics in Mathematical Statistics

Math 471 Introduction to Stochastic Models

Math 472 Simulation Modeling and Analysis
Math 473 Advanced Topics in Operations Research
Math 474 Mathematical Modeling
Math 491 Independent Study (1 credit hour)
Math 492 Independent Study (2 credit hours)
Math 493 Independent Study (3 credit hours)

AT MOST THREE of the following 300 level courses:

Math 302 Ordinary Differential Equations II
Math 303 Partial Differential Equations
Math 309 Numerical Analysis II
Math 328 Complex Variables
Math 334 Mathematical Statistics I
Math 336 Mathematical Statistics II
Math 338 Advanced Calculus: Single Variable
Math 343 Linear Algebra II
Math 365 Statistical Computer and Data Analysis Packages

Applications

Application forms and other information may be obtained directly from:
The Graduate College
Northeastern Illinois University
5500 N. St. Louis Avenue
Chicago, IL 60625-4699
or downloaded from the university website at www.neiu.edu

Tuition Waivers

A limited number of tuition waivers are available. For more details contact your advisor or download application form from the university website.

Program Advisor

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For question in regard to the MS – Secondary Education, please contact:

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