Master of Science Degree Program in Teaching and Curriculum
with Emphasis in Mathematics Education

The School of Education of Syracuse University offers the M.S. Teaching and Curriculum program. Students can study mathematics education as part of the Teaching and Curriculum program. The program with emphasis in Mathematics Education is designed for students who already have the equivalent of at least a B.A. in Mathematics Education, that is, a major in mathematics and sufficient professional education courses to qualify for initial certification as a secondary school mathematics teacher in New York, or for international students with the equivalent of a B.A. in mathematics who are not seeking certification.

This program aims to provide the initially certified teacher with greater breadth and depth of understanding of mathematics and education, and to strengthen the candidate's ability to develop mathematics curricula, to plan instruction, and to evaluate learning. It is suitable for students whose careers will include teaching mathematics in middle or senior high school or developing instructional materials for mathematics.

Requirements
This program has the following requirements:

1. Complete four graduate courses in mathematics (see discussion below regarding mathematics courses).
2. Complete four graduate courses in mathematics education/education, with at least two in mathematics education and one in basic research methods.
3. Complete two additional graduate courses, with advice from your advisor.
4. Participate in the Professional Development School/Academy of Mathematics Educators.
5. Complete a master's examination or thesis.
6. Complete a professional portfolio, with a successful presentation required at the exit stage.

Since students enter graduate studies with different types of academic preparation, changes in these requirements may be sought through written petition. The advisor will make decisions about petition requests.

Each semester there is a graduate course in mathematics education that may be appropriate for persons in the M.S. program. These courses include:

- MTD 600/800  Teaching and Learning Statistics
- MTD/SED 634  Teaching and Learning Functions
- MTD/SED 635  Teaching and Learning Geometry
- MTD/EED/SED 636  Assessing Mathematical Understanding
- MTD 735  Learning Theories in Mathematics Education
Mathematics Courses

The four major content areas for secondary mathematics teachers are algebra, analysis, geometry and statistics. While depending upon the individual student’s undergraduate background and achievement, we expect that most master’s degree students in mathematics education will take one graduate level course in mathematics in each of these four areas.

All master’s degree students in mathematics education are required to take a minimum of four courses in mathematics. All students must take a course in analysis, MAT 512 or MAT 605 (depending on their undergraduate background), and at least one other course at the 600 level. Working with their advisor and subject to the advisor’s approval, the students may select from among the following courses:

(1) Analysis: Must take either MAT 512 or MAT 605, depending on background. Additional courses could include: MAT 513, 517, or 518

(2) Algebra: MAT 531, 532, 534, 545, 635, 636

(3) Probability and Statistics: MAT 525, 526, 621, 625, 626, 627, 628. For those students who are well prepared from their undergraduate program, MAT 625 would be highly recommended.

(4) Geometry: MAT 551, 554, 645. For those students who are well prepared from their undergraduate program, MAT 551 would not be an option.

For students with a strong interest in applied mathematics and appropriate background in computer languages, any of the following courses could be taken: MAT 581, 682, 683, or 687. For those students with an interest in number theory, MAT 541 may be taken.

In addition, we recommend that all students consider taking MAT 593 History of Mathematics as an elective, although this course cannot be used to meet the minimum requirement of four mathematics courses.

Suggested Course Sequence

Fall Semester 1st Year
MTD xxx Graduate Mathematics Education course (3 credits)
MAT xxx Graduate Mathematics course (3 credits)
MTD 630 or MAT xxx Internship or other course (3 credits)

Spring Semester 1st Year
MTD xxx Graduate Mathematics Education course (3 credits)
MAT 512 or xxx Graduate Mathematics course (3 credits)
MTD 630 or MAT xxx Internship or other course (3 credits)

Summer 1st Year
Electives (MAT 525, 541, 551, 593 when offered)
Fall Semester 2nd Year
MTD xxx Graduate Mathematics Education course (3 credits)
MAT xxx Graduate Mathematics course (3 credits)
MTD 630 or MAT xxx Internship or other course (3 credits)

Admission to the Program
• Apply for admission to the Graduate School of Syracuse University for the degree of Master of Science. State on the application form that admission is sought to the Teaching and Curriculum program.

• If admitted to the program through the Graduate School, the student will be assigned a program advisor who will direct the student’s initial program of study.

Financial Assistance
The majority of full-time graduate students in mathematics education at Syracuse University are supported on teaching assistantships through the Department of Mathematics, Teaching and Leadership in the School of Education, or on research assistantships through mathematics education faculty grants. Financial assistance is also available through TEACH grants, New York State Mathematics and Science Teaching Incentive Scholarships, the Stafford Loan Forgiveness Program for Teachers and Syracuse University Tuition Discounts (33% off). Contact Prof. Joanna Masingila for more information regarding financial assistance.

Mathematics Education Faculty
Helen M. Doerr, Professor of Mathematics and Mathematics Education
  Ph.D., Cornell University, 1994
  areas of interest: secondary mathematics education, use of computer technologies to enhance student understandings and problem solving skills

Joanna O. Masingila, Professor of Mathematics and Mathematics Education
  Ph.D., Indiana University - Bloomington, 1992
  areas of interest: ethnomathematics, teacher education, connecting mathematics learning and practice in and out of school, curriculum development

Patricia P. Tinto, Associate Professor of Teaching and Leadership
  Ph.D., Syracuse University, 1990
  areas of interest: collaborative learning, working with teachers as researchers in their own classrooms, teacher education

Inquiries
Prof. Joanna O. Masingila, Coordinator of Mathematics Education Program
Syracuse University
203 Carnegie Hall
Syracuse, NY 13244-1150
(315) 443-1483
email: jomasing@syr.edu