MATHEMATICAL SCIENCES (MS)

Mathematics Department (https://math.nyu.edu/dynamic/sites/tandon/ms-students/tandon-ms-overview/)

NYSED: 08863 **HEGIS:** 1701.00 **CIP:** 27.0301

Program Description

The Master of Science in Mathematical Sciences at NYU's Tandon School of Engineering educates and prepares students in the areas of mathematics most useful for real-world applications in engineering, technology, and science. Applicants should have earned a Bachelor's degree with a strong background in mathematics generally. The aim of the program is to strengthen students' knowledge in applied mathematics towards careers in engineering, industry, the technological sector, and the applied sciences, as well as provide preparation for PhD programs in these areas.

The program provides interdisciplinary knowledge through core courses in applied math and an extensive and diverse offering of elective courses. Required courses provide a strong foundation in mathematical analysis and linear algebra. Electives can be tailored to the student's interest, for example, in the physical sciences, engineering, economics, computational biology, probability and statistics, etc. Engaging in research under a faculty adviser is encouraged, and students may compose a thesis as an alternative to the end-of-program exam.

Admissions

To apply for admission to any Tandon graduate program, please contact the Office of Graduate Admissions (https://engineering.nyu.edu/admissions/graduate/).

Admissions Requirements

You must have a bachelor's degree in mathematics for admission to this program. Students with degrees in other fields may be admitted; those with undergraduate deficiencies may be admitted at the discretion of departmental advisers. Before beginning graduate studies, you are expected to have completed a 1-year course in advanced calculus.

Program Requirements

The program requires the completion of 30 credits, and students choose one of the following options for completion:

Examination Option

Course	Title	Credits
Required Core Courses		
MA-GY 7033	Linear Algebra I	3
MA-GY 7043	Linear Algebra II	3
MA-GY 6213	Intro to Math Analysis I	3
MA-GY 6223	Intro to Math Analysis II	3
Electives		
Select 18 credits, possibly with up to nine from approved subspecialities in other departments		18
Total Credits		**30**

Note
Includes a comprehensive oral examination before the degree is awarded. Examinations cover the student's program of study and are scheduled towards the end of the semester in which the work is completed.

Thesis Option

Course	Title	Credits
Required Core Courses		
MA-GY 7033	Linear Algebra I	3
MA-GY 7043	Linear Algebra II	3
MA-GY 6213	Intro to Math Analysis I	3
MA-GY 6223	Intro to Math Analysis II	3
Electives		
Select 12 credits of electives		12
Master's Thesis		
Select 6 credits of MS Thesis [1]		6
MA-GY 997X	MS Thesis in Math	
Total Credits		**30**

[1] Requires an examination of the thesis material by faculty advisers and certification that the work is satisfactory. MS Thesis in Math is most often taken across two semesters: i.e. 3 credits + 3 credits.

Sample Plan of Study

Examination Option

Course	Title	Credits
1st Semester/Term		
MA-GY 6213	Intro to Math Analysis I	3
MA-GY 7033	Linear Algebra I	3
MATH-GA 2901	Essentials of Probability (specialization)	3
	Credits	**9**
2nd Semester/Term		
MA-GY 6223	Intro to Math Analysis II	3
MA-GY 7043	Linear Algebra II	3
MA-GY 6963	Statistics (specialization)	3
	Credits	**9**
3rd Semester/Term		
MA-GY 6973	Computational Statistics (specialization)	3
MATH-GA 2043	Scientific Computing	3
Elective		3
	Credits	**9**
4th Semester/Term		
MATH-GA 2012	Adv Tpcs in Numerical Analysis: (High Performance Computing)	3
	Credits	**3**
	Total Credits	**30**

Thesis Option

Course	Title	Credits
1st Semester/Term		
MA-GY 6213	Intro to Math Analysis I	3
MA-GY 7033	Linear Algebra I	3
Elective		3
	Credits	**9**
2nd Semester/Term		
MA-GY 6223	Intro to Math Analysis II	3
MA-GY 7043	Linear Algebra II	3

Elective		3
	Credits	**9**
3rd Semester/Term		
MA-GY 997X	MS Thesis in Math	3
Elective		3
Elective		3
	Credits	**9**
4th Semester/Term		
MA-GY 997X	MS Thesis in Math	3
	Credits	**3**
	Total Credits	**30**

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Have the knowledge and skills in mathematics as applied to engineering, technology, science, and related disciplines.
2. Receive an education through required courses in the core areas of mathematical analysis and linear algebra.
3. Be provided with career-preparedness education and training through multi-disciplinary elective courses and options for conducting research and preparing a thesis.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (https://bulletins.nyu.edu/nyu/policies/).

Tandon Policies

Additional academic policies can be found on the Tandon academic policy page (https://bulletins.nyu.edu/graduate/engineering/academic-policies/).