NJIT
New Jersey's Science & Technology University

THE EDGE IN KNOWLEDGE

The Master of Science Program in Applied Mathematics

Department of Mathematical Sciences

College of Science and Liberal Arts

New Jersey Institute of Technology

WHY STUDY APPLIED MATHEMATICS?

Mathematics has always been crucial to many different forms of scientific inquiry. Now, more than ever, advances in scientific research are found to benefit from the formulation and analysis of quantitative mathematical models. Successful analysis of a model leads to a better understanding of the role and interaction of key components in the system being studied and provides a predictive tool for improving system performance. The sequence of model development, analysis, simulation, and interpretation of data demands the application of sophisticated modern and classical mathematical methods. With society's growing use of mathematically oriented innovation, career opportunities for applied mathematicians are better than ever.

WHY STUDY APPLIED MATHEMATICS AT NJIT?

Active participation in the MS program by more than 40 NJIT mathematical sciences faculty produces a stimulating learning environment. Many of the program faculty have earned international reputations as a result of the breadth and depth of their accomplishments. The MS in Applied Mathematics program offers students a unique opportunity to learn from leading experts in the field, and to encounter the vital process of applied research - much of it sponsored by government agencies and industry. Through activities, such as a regular colloquium series and seminars, developed in close collaboration between the Department of Mathematical Sciences and the Center for Applied Mathematics and Statistics, students are exposed to the latest innovations in the mathematical sciences.

WHO SHOULD ENROLL?

The program is intended for motivated students with a strong interest in mathematics, who enjoy the challenges of problem solving, and are interested in a career in the mathematical sciences or a related field. It is designed to meet the needs of those intending to pursue a doctoral degree in the mathematical or related sciences, but is also well-suited to students who want to expand their mathematical skills for careers in industry, commerce, or education. The program will benefit practicing engineers and high technology workers seeking to enhance their expertise in applied mathematics. The degree can be completed on a part-time basis, but participation on a full-time basis is encouraged.

IS FINANCIAL AID AVAILABLE?

Financial support for full-time students in the MS program is extremely limited. Full-time domestic and international students may be eligible to receive the Provost Fellowship. For further information on financial aid, visit www.njit.edu/graduatestudies/finaid.php.

PROGRAM SUMMARY.

Degree Awarded: Master of Science in Applied Mathematics
Credits Required: 30 (ten 3 credit hour courses)
Program Objective: To educate students in applied mathematics and to prepare them for a range of activities that focus on the solution of modern scientific, technological, and industrial problems.

ADMISSIONS REQUIREMENTS:

Bachelor's degree in Mathematics, Applied Mathematics, or other mathematically oriented discipline such as Physics, Engineering, Biology, or Chemistry.
GPA of at least 2.8 on a 4.0 scale required.
GRE required for all those seeking financial support and for all applicants whose most recent degree was awarded from an institution outside of the United States. For all others, GRE scores are encouraged but not required.
TOEFL required for international students (550 or above, 213 computer-based.)

AREAS OF CONCENTRATION OR SPECIALTY TRACKS.

The MS program in Applied Mathematics degree has four tracks: Applied Mathematics, Computational Mathematics, Analysis, and Mathematical Biology.

CORE COURSES (15 CREDIT HOURS)

Math 613	Advanced Applied Math I (Modeling)
Math 631	Linear Algebra
Math 645*	Analysis I
Math 656	Complex Variables I
Math 689	Advanced Applied Mathematics II (ODES)

*Students specializing in Applied Mathematics or Computational Mathematics may take Math 545 (Introductory Mathematical Analysis) and Math 546 (Advanced Calculus) instead of Math 645 and three credits of elective.

REQUIRED COURSES BY AREA OF CONCENTRATION (6 CREDIT HOURS)

Analysis:
- Math 745 Analysis II (3 credits)
- Math 756 Complex Variables II (3 credits)

Applied Mathematics:
- Math 614 Numerical Methods I (3 credits)
- Math 690 Advanced Applied Mathematics III: Partial Differential Equations (3 credits)

Computational Mathematics:
- Math 614 Numerical Methods I (3 credits)
- Math 712 Numerical Methods II (3 credits)

Mathematical Biology:
- Math 635 Analytical Computational Neuroscience (3 credits)
- Math 637 Foundations of Mathematical Biology (3 credits)

Electives (9 credit hours) are selected with approval of the graduate advisor.

FOR FURTHER INFORMATION, CONTACT:

Graduate Programs, Department of Mathematical Sciences
math@njit.edu 973-596-5782
http://math.njit.edu

TO APPLY, CONTACT:

Office of Graduate Admissions,
(973) 596-3300, or apply on-line at
www.njit.edu/admissions/apply-online.php.