

MASTER OF APPLIED MATHEMATICS

The Master of Applied Mathematics program at Illinois Institute of Technology is a non-thesis professional master's degree program that provides graduates with mathematics training for technology-based jobs in business, industry, or government. Graduates develop state-of-the-art skills in modeling, statistics, and computation needed to solve real-world problems. The program requires students to learn writing and communication skills along with teamwork and project management skills. The program can typically be completed in 15 months, with three regular term semesters and one summer semester.

Admission Requirements

Students are required to have a bachelor's degree in mathematics, science, engineering, business, or an equivalent degree, with a minimum GPA of 3.0/4.0. Applicants are evaluated on an individual basis, but students are expected to have taken the following courses (or equivalent courses): Differential Equations, Matrix or Linear Algebra, Probability or Statistics, and a Computer Programming language (e.g. Matlab, C, or R). Graduate Record Examination (GRE) scores must be submitted with the following minimum scores: 304 (quantitative + verbal), and 2.5 (analytical writing). Any applicant whose undergraduate degree was earned at an institution where the primary language of instruction is not English must submit Test of English as a Foreign Language (TOEFL), Pearson Test of English (PTE), or International English Language Testing System (IELTS) scores, which must satisfy Illinois Institute of Technology's English language proficiency test requirements (see the Graduate Admission section for more information). A professional statement of objectives must be submitted and at least one letter of recommendation is required.

Curriculum

Code	Title	Credit Hours
Applied Mathematics and Computational Science Core		(9)
MATH 475	Probability	3
MATH 522 or MATH 564	Mathematical Modeling Applied Statistics	3
MATH 577	Computational Mathematics I	3
Business and Professional Core		(3)
SCI 511 or SCI 522	Project Management Public Engagement Scientists	3
Capstone Professional Experience		(9)
MATH 523 or MATH 592	Case Studies & Project Design Internship in Applied Math	6
MATH 594	Professional Master's Project	3
Elective Courses		(9)
Select a minimum of three courses from the following:		9
Advanced Computation		
MATH 461 or MATH 489	Fourier Sers&Boudary-Val Probs Partial Differential Equations	3
MATH 565	Monte Carlo Methods in Fin	3
MATH 578	Computational Mathematics II	3
MATH 581	Finite Element Method	3
MATH 589	Num Meth for Partial Diff Equa	3
CS 595	Topics in Computer Science	3-12
MSF 526	Computational Finance	3
Stochastic Modeling and Analysis		
MATH 481	Intro to Stochastic Processes	3
MATH 485	Intro to Mathematical Finance	3
MATH 542	Stochastic Processes	3
MATH 548	Mathematical Finance I	3
MATH 582	Mathematical Finance II	3
Statistical and Data Analytics		
MATH 563	Mathematical Statistics	3
MATH 564	Applied Statistics	3

MATH 565	Monte Carlo Methods in Fin	3
MATH 567	Adv Design of Experiments	3
MATH 574	Bayesian Computational Stats	3
Discrete Mathematics and Optimization		
MATH 535	Optimization I	3
MATH 553	Discrete Applied Mathematics I	3
MATH 554	Discrete Applied Math II	3
Total Credit Hours		30

Degree Requirements

All Graduate College requirements must be satisfied. Specific departmental requirements follow.

Credit Requirements

The student must complete 30 credit hours and maintain a 3.0/4.0 GPA. There are 21 credit hours of required, core courses. Nine credit hours of electives, selected in consultation with, and approval of, the program director are required. The program may include a maximum of nine credit hours at the 400-level.

Capstone Professional Experience

The capstone consists of a six credit hour course in case studies and project management or an internship in applied mathematics.

Master's Project

The project, which is three credit hours of MATH 594, is conducted under the supervision of a faculty member or an industrial partner.

Course Substitutions and Prerequisites

Course substitutions and needed prerequisite courses may be permitted, subject to the approval of the program director.