Applied Mathematics

The Graduate Certificate in Applied Mathematics provides professionals and post-graduate level learners with advanced mathematical skills and tools to construct models, simulate physical systems, and extract parameters using physics-informed inferencing approaches across various high-tech industries.

What will I learn?

How to construct, analyze, and simulate a model and interpret/improve the model based on data. The techniques learned in this certificate can be used to study a system through data collection, modeling, analysis, and physics-informed inferences of parameters. This certificate will help engineers and physicists conduct advanced modeling and analysis of systems by identifying conditions and parameters to improve outcomes.

Why Study Applied Mathematics at NJIT?

The Graduate Certificate in Applied Mathematics focuses on mathematical techniques for simulating and analyzing models constructed for physical systems that arise in engineering and industrial applications. The curriculum is set up by faculty in these fields, and students can apply these techniques immediately.

Prerequisites

Applicants must have an undergraduate degree from an accredited institution and at least twelve credits in mathematics, including the calculus sequence. Students who do not meet these requirements may be admitted if they satisfy the university's admission requirements. An undergraduate GPA of 3.0 (out of 4.0) or equivalent is normally required.

The certificate in Applied Mathematics requires the completion of 4 courses.

Code	Title	Credits
A minimum of two of the following core requirements must be completed:		6
MATH 651	Methods of Applied Mathematics I	
MATH 631	Linear Algebra [1]	
or MATH 630	Linear Algebra and Applications	
MATH 645	Analysis I	
or MATH 545 & MATH 546	Introductory Mathematical Analysis and Advanced Calculus	
Any remaining courses may be chosen from the following elective courses:		6
MATH 611	Numerical Methods for Computation [1]	
or MATH 614	Numerical Methods I	
MATH 613	Advanced Applied Mathematics I: Modeling	
MATH 637	Foundations of Mathematical Biology	
MATH 656	Complex Variables I	
MATH 676	Advanced Ordinary Differential Equations	

[1] Math 631, Math 611 do not satisfy any requirements for the M.S. in Applied Math