APPLIED MATHEMATICS (MINOR)

Program Description

Mathematics is the branch of human inquiry involving the study of data, numbers, relations, shapes, space, symmetries, and how these concepts relate to each other. Despite its often abstract nature, mathematics takes inspiration from the real world and provides the logical and analytical tools for tackling many of the important problems of our time. By its very nature, mathematics provides the means to break many problems into manageable pieces that can be analyzed and solved. In fact, mathematical approaches have been central to solving problems and modeling phenomena in a wide array of disciplines. Probability and statistical analysis are fundamental for mapping and analyzing the human genome. Advanced mathematical theories provide the keys to analyzing the risk of rare events, a basic problem of the financial markets. In physics, geometry finds applications to particle physics, to string theory, and to cosmology. In neuroscience, exciting new research into the structure and functioning of the brain relies heavily on the insights provided by mathematical modeling. These are but a few of the contemporary problems relying on mathematical analysis. Mathematical thinking is grounded in rigor and abstraction, but draws its vitality from questions arising in the natural world as well as applications to industry and technology.

Mathematics is often associated with science, particularly computer science, physics and chemistry. It is also the language and tool of the contemporary life sciences, including ecology and environmental studies, as well as the world of business and the economy.

The minor in Applied Mathematics at NYU Abu Dhabi is designed to prepare students in science and the social sciences with the critical quantitative tools and reasoning skills needed to solve problems in those disciplines.

Students will complete two required courses and at least two electives, for a minimum of 16 credits.

Program Requirements

Course	Title	Credits
Minor Required Courses		
MATH-UH 1012Q	Calculus with Applications to Science and Engineering (see note)	4
MATH-UH 1020Q	Multivariable Calculus with Applications to Science and Engineering	4
Minor Electives		
Complete enough courses to reach the minimum of 16 credits required for the minor. Electives can be chosen from the list below or any Applied Math electives (listed further below).		8
MATH-UH 1022Q	Linear Algebra	
MATH-UH 2010Q	Ordinary Differential Equations	
MATH-UH 2011Q	Probability and Statistics	
Total Credits		**16**

Note: Students who place out of Calculus with Applications must take an additional Elective in its place.

Applied Math Electives

Code	Title	Credits
CS-UH 3211	Quantum Computing	4
ECON-UH 4005	Advanced Mathematics for Economists	4
MATH-UH 2410Q	Mathematical Modeling	4
MATH-UH 3410	Number Theory and Cryptography	4
MATH-UH 3411	Dynamical Systems	4
MATH-UH 3413	Numerical Methods	4
MATH-UH 3414	Partial Differential Equations	4
MATH-UH 3415Q	Stochastic Processes	4
MATH-UH 3612	Differential Geometry	4
PHYS-UH 3010	Mechanics	4
SOCSC-UH 3210	Advanced Game Theory	4

Policies

NYU Policies

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

NYU Abu Dhabi Policies

A full list of relevant policies can be found on NYU Abu Dhabi's undergraduate academic policies page (https://bulletins.nyu.edu/undergraduate/abu-dhabi/academic-policies/).