APPLIED MATHEMATICS (M.S.)

https://www.unh.edu/program/master-science/mathematics-applied-mathematics

Description

The MS in Applied Mathematics provides a broad introduction to modern applied mathematics and the opportunity to apply the curriculum in a wide range of application areas.

Admission Requirements

Applicants to the M.S. degree in applied mathematics must have completed significant coursework in pure or applied mathematics, preferably including numerical analysis, differential equations, real analysis, and complex analysis.

Applying

Please visit the Graduate School website for detailed instructions about applying to the master's program.

Requirements

Degree Requirements

This program requires **30 credit hours**.

Code	Title	Credits
Required Courses		
MATH 931	Mathematical Physics	3
IAM 933	Applied Functional Analysis	3
Select an approved two-course sequence in applied mathematics, such as:		6
IAM 961 & IAM 962	Numerical Analysis I: Numerical Linear Algebra and Numerical Partial Differential Equations	
MATH 898	Master's Project	3
Electives		
Select five elective courses, in consultation with advisor.		15
Total Credits		**30**

The elective courses need not be in mathematics, but must be at the 800 level or higher, and at least one must be a technical course in statistics or some other department. The broad elective flexibility allows the student's application interests to have a substantial role in the content of the program.

The student's full program plan must be proposed in writing to the applied mathematics faculty and approved prior to the student's second semester of study. There is no comprehensive examination in this option.

Accelerated Master's

Accelerated Master's Overview

Accelerated Master's programs offer qualified University of New Hampshire undergraduate students the opportunity to begin graduate coursework in select graduate programs while completing a bachelor's degree. Accelerated master's programs are designed to provide students with an efficient and cost-effective pathway to earn both a bachelor's and master's degree or graduate certificate, enhancing career opportunities and long-term earning potential.

Accelerated Master's Highlights

- Begin studying advanced topics while an undergraduate student with the opportunity to complete a master's degree or graduate certificate early.
- Master's degree program students: Earn up to 12* graduate (800-level) course credits while completing a bachelor's degree. This coursework will count as dual-credit toward both the bachelor's and master's degrees.
- Graduate certificate program students: Earn up to 8* graduate (800-level) course credits while completing a bachelor's degree. This coursework will count as dual-credit toward both the bachelor's degree and the graduate certificate.
- Students complete the bachelor's degree, and then officially matriculate into the master's or graduate certificate program to complete the remaining required graduate-level coursework.

**Some exceptions apply.*

Accelerated Master's Admission Requirements

- A minimum 3.2 cumulative GPA is required.*
- A minimum of 90 undergraduate credits must be completed prior to enrolling in graduate (800-level) courses.
- Streamlined Graduate School Application (two letters of recommendation; most standardized tests and application fee are waived).*

**Some exceptions apply.*

Accelerated Master's Requirements

- Students must attend a mandatory orientation session.
- Students must submit a special registration form each semester for dual-credit courses and note any DegreeWorks exceptions.
- Students may defer graduate matriculation for up to one year after earning their bachelor's degree in most programs.
- See the Accelerated Master's Catalog Policy and Accelerated Master's Website for additional information and a list of programs. Note that some programs have additional requirements (e.g. higher-grade expectations) compared to the general policy.

Applied Mathematics (M.S.) Accelerated Option

This graduate degree program is approved to be taken on an accelerated basis in articulation with the following undergraduate program(s):

Code	Title	Credits
Applied Mathematics (B.S.)		
Students select from the following approved 800-level courses that can be completed in the undergraduate senior year for dual credit:		
MATH 834	Statistical Computing	3
MATH 838	Data Mining and Predictive Analytics	3
MATH 839	Applied Regression Analysis	3
MATH 845	Foundations of Applied Mathematics I	3
MATH 847	Introduction to Nonlinear Dynamics and Chaos	3
MATH 853	Introduction to Numerical Methods	3
MATH 855	Probability with Applications	3
MATH 857	Mathematical Optimization for Applications	3
MATH 867	One-Dimensional Real Analysis	3
MATH 872	Combinatorics	3

MATH 888	Complex Analysis	3
CS 850	Machine Learning	4
IAM 851	Introduction to High-Performance Computing	3

Code	Title	Credits
Applied Mathematics: Computation (B.S.)		
Students select from the following approved 800-level courses that can be completed in the undergraduate senior year for dual credit:		
MATH 845	Foundations of Applied Mathematics I	3
MATH 847	Introduction to Nonlinear Dynamics and Chaos	3
MATH 853	Introduction to Numerical Methods	3
MATH 857	Mathematical Optimization for Applications	3
MATH 867	One-Dimensional Real Analysis	3
IAM 851	Introduction to High-Performance Computing	3

Code	Title	Credits
Applied Mathematics: Economics (B.S.)		
Students select from the following approved 800-level courses that can be completed in the undergraduate senior year for dual credit:		
MATH 839	Applied Regression Analysis	3
MATH 845	Foundations of Applied Mathematics I	3
MATH 847	Introduction to Nonlinear Dynamics and Chaos	3
MATH 853	Introduction to Numerical Methods	3
MATH 855	Probability with Applications	3
MATH 857	Mathematical Optimization for Applications	3
MATH 867	One-Dimensional Real Analysis	3
IAM 851	Introduction to High-Performance Computing	3

Student Learning Outcomes

Program Learning Outcomes

- Students possess advanced competence in three basic branches of mathematics -- topology, algebra and analysis -- comprising both content knowledge and the ability to reason with and communicate such knowledge.
- Students possess significant exposure to graduate level content in the broader mathematical sciences.
- Students possess significant depth of graduate-level knowledge in some area(s) of mathematics.