MATHEMATICS MAJOR (B.A.)

https://ceps.unh.edu/mathematics-statistics/program/ba/mathematics

Description

The bachelor of arts degree with the mathematics major may offer a broader liberal arts program than the bachelor of science degree programs. By a careful selection of electives, students can shape this major into a preparation for graduate school, business, or industry.

Requirements

Degree Requirements

Minimum Credit Requirement: 128 credits

Minimum Residency Requirement: 32 credits must be taken at UNH

Minimum GPA: 2.0 required for conferral*

Core Curriculum Required: Discovery & Writing Program Requirements

Foreign Language Requirement: Yes

All Major, Option and Elective Requirements as indicated.
**Major GPA requirements as indicated.*

Major Requirements

In all courses used to satisfy the requirements for its major programs, the Department of Mathematics and Statistics requires that a student earn a grade of C- or better and have an overall grade-point average of at least 2.00 in these courses.

Code	Title	Credits
Required MATH Courses		
MATH 425	Calculus I	4
MATH 426	Calculus II	4
MATH 445	Mathematics and Applications with MATLAB	4
or CS 410P	Introduction to Scientific Programming/Python	
or CS 410C	Introduction to Scientific Programming/C	
MATH 527	Differential Equations with Linear Algebra [1]	4
MATH 528	Multidimensional Calculus [1]	4
MATH 531	Mathematical Proof	4
MATH 539	Introduction to Statistical Analysis	4
MATH 545	Introduction to Linear Algebra [1]	4
or MATH 645	Linear Algebra for Applications	
MATH 761	Abstract Algebra	4
MATH 767	One-Dimensional Real Analysis	4
THREE approved MATH courses, selected in consultation with the academic advisor		12
Capstone: Select one of the following		
MATH 797	Senior Seminar	4
MATH 799	Senior Thesis	2 or 4
Other Required Courses		
Foreign language requirement as defined by the University for all B.A. degrees.		
Total Credits		**58-60**

[1] The full Linearity sequence, MATH 525 and MATH 526, may be used to replace the MATH 527, MATH 528, and MATH 545 / MATH 645 requirements.

MATH 525 may be used to replace the MATH 545 or MATH 645 requirement.

Degree Plan

First Year		
Fall		**Credits**
MATH 425	Calculus I	4
Language Course		4
Discovery Course		4
Inquiry Course		4
MATH 400	Freshman Seminar	1
	Credits	**17**
Spring		
MATH 426	Calculus II	4
MATH 445 or CS 410C or CS 410P	Mathematics and Applications with MATLAB or Introduction to Scientific Programming/C or Introduction to Scientific Programming/Python	4
ENGL 401	First-Year Writing	4
Language Course		4
	Credits	**16**
Second Year		
Fall		
MATH 528	Multidimensional Calculus	4
MATH 539	Introduction to Statistical Analysis	4
Discovery Course		4
Discovery Course		4
	Credits	**16**
Spring		
MATH 527	Differential Equations with Linear Algebra	4
MATH 531	Mathematical Proof	4
Discovery Course		4
Discovery Course		4
	Credits	**16**
Third Year		
Fall		
MATH 545 or MATH 645	Introduction to Linear Algebra or Linear Algebra for Applications	4
MATH 761	Abstract Algebra	4
Discovery Course		4
Writing Intensive Course		4
	Credits	**16**
Spring		
MATH 767	One-Dimensional Real Analysis	4
MATH Elective Course		4
Discovery Course		4
Writing Intensive Course		4
	Credits	**16**

Fourth Year		
Fall		
MATH 797 or MATH 799	Senior Seminar or Senior Thesis	4
MATH Elective Course		4
Elective Course		4
Elective Course		4
	Credits	**16**
Spring		
MATH Elective Course		4
Elective Course		4
Elective Course		4
Elective Course		4
	Credits	**16**
	Total Credits	**129**

Student Learning Outcomes

- Students can explain core concepts from a range of different branches of mathematics, including analysis, algebra, calculus and statistics.
- Students can correctly interpret mathematical definitions and construct simple proofs which use definitions and logical arguments to establish properties of mathematical objects.
- Students are aware that mathematical objects may have multiple representations and are able to select representations which clarify problems and simplify calculations.
- Students can recognize valid and invalid mathematical arguments.