

MATHEMATICS EDUCATION MAJOR (B.S.)

<https://ceps.unh.edu/mathematics-statistics/program/bs/mathematics-education>

Description

This professional degree program prepares students for teaching mathematics at the middle or high school level. The program is coordinated with the education department's teacher certification programs. Students may complete the degree requirements with full teacher certification in either four or five years.

Students electing the four-year option leading to certification must plan for one semester of student teaching in their senior year; this requires careful planning with your program adviser to accommodate the scheduling of required MATH courses.

The five-year program includes a year-long teaching internship in the fifth year. The internship requires admission into a UNH Department of Education graduate program that leads to certification. [See Education, College of Liberal Arts.](#)

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: No

All Major, Option and Elective Requirements as indicated.

*Major GPA requirements as indicated.

Major Requirements

- Requirements for admission to student teaching include receiving credit for EDUC 500 and a minimum cumulative 2.8 GPA.
- 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.
- For **teacher licensure** a grade of B- or better is required in all Education 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 531	Mathematical Proof	4
MATH 539	Introduction to Statistical Analysis	4
or MATH 644	Statistics for Engineers and Scientists	

MATH 545	Introduction to Linear Algebra	4
or MATH 645	Linear Algebra for Applications	
or MATH 525	Linearity I	
MATH 624	Analysis of Secondary School Mathematics A (Number Systems & Functions)	4
MATH 626	Analysis of Secondary School Mathematics B (Geometry, Statistics, & Probability)	4
MATH 700	Introduction to Mathematics Education	4
MATH 760	Geometry	4
MATH 790	Historical Foundations of Mathematics	4
Capstone		
Select one of the following:		
MATH 797	Senior Seminar	
MATH 799	Senior Thesis	
Required EDUC Courses		
EDUC 500	Exploring Teaching	4
EDUC 605	Educational Perspectives in Critical Times	4
EDUC 701	Human Development & Learning: Cultural Perspectives	4
<i>Middle School Pathway Requirements</i>		
MATH 601	Exploring Mathematics for Teachers I	4
MATH 703	Teaching of Mathematics in Grades K-5	4
or MATH 709	Teaching of Mathematics in Grades 6-12	
Select one MATH elective from the following, chosen in consultation with academic advisor:		
MATH 527	Differential Equations with Linear Algebra ¹	4
MATH 528	Multidimensional Calculus ¹	
MATH 761	Abstract Algebra	
MATH 767	One-Dimensional Real Analysis	
MATH 770	Foundations of Number Theory	
MATH 772	Combinatorics	
<i>High School Pathway Requirements</i>		
MATH 709	Teaching of Mathematics in Grades 6-12	4
MATH 761	Abstract Algebra	4
Select one MATH elective from the following, chosen in consultation with academic advisor:		
MATH 527	Differential Equations with Linear Algebra ¹	4
MATH 528	Multidimensional Calculus ¹	
MATH 767	One-Dimensional Real Analysis	
MATH 770	Foundations of Number Theory	
MATH 772	Combinatorics	

¹ The full Linearity sequence, MATH 525 Linearity I and MATH 526 Linearity II, may be used to replace MATH 527 Differential Equations with Linear Algebra, MATH 528 Multidimensional Calculus, and MATH 545 Introduction to Linear Algebra, MATH 645 Linear Algebra for Applications.

Note: EDUC 751B Methods of Inclusive Secondary Education: Literacies, Learning, and Transitions is a requirement for certification and may be taken as an undergraduate.

Degree Plan

Sample Degree Plan

This sample degree plan serves as a general guide; students collaborate with their academic advisor to develop a personalized degree plan to meet their academic goals and program requirements.

Middle School Pathway

First Year

Fall		Credits
MATH 425	Calculus I	4
ENGL 401	First-Year Writing	4
Discovery Course		4
Inquiry Course		4

MATH 400	Freshman Seminar	1
Credits		17
Spring		
MATH 426	Calculus II	4
MATH 445 or CS 410P or CS 410C	Mathematics and Applications with MATLAB or Introduction to Scientific Programming/Python or Introduction to Scientific Programming/C	4
Discovery Course		4
Discovery Course		4
Credits		16
Second Year		
Fall		
MATH 531	Mathematical Proof	4
MATH 539 or MATH 644	Introduction to Statistical Analysis or Statistics for Engineers and Scientists	4
EDUC 500	Exploring Teaching	4
Discovery Course		4
Credits		16
Spring		
MATH 601	Exploring Mathematics for Teachers I	4
MATH 545 or MATH 645 or MATH 525	Introduction to Linear Algebra or Linear Algebra for Applications or Linearity I	4
MATH 790	Historical Foundations of Mathematics	4
Discovery Course		4
Credits		16
Third Year		
Fall		
MATH 700	Introduction to Mathematics Education	4
MATH 760	Geometry	4
Discovery Course		4
Elective Course		4
Credits		16
Spring		
MATH 624	Analysis of Secondary School Mathematics A (Number Systems & Functions)	4
MATH 703 or MATH 709	Teaching of Mathematics in Grades K-5 or Teaching of Mathematics in Grades 6-12	4
EDUC 605	Educational Perspectives in Critical Times	4
Elective Course		4
Credits		16
Fourth Year		
Fall		
MATH 626	Analysis of Secondary School Mathematics B (Geometry, Statistics, & Probability)	4
MATH elective		4
Discovery Course		4
Elective Course		4
Credits		16

Spring		
MATH 797	Senior Seminar	4
EDUC 701	Human Development & Learning: Cultural Perspectives	4
Elective Course		4
Elective Course		4
Credits		16
Total Credits		129

High School Pathway

First Year		
Fall		
MATH 425	Calculus I	4
ENGL 401	First-Year Writing	4
Discovery Course		4
Inquiry Course		4
MATH 400	Freshman Seminar	1
Credits		17
Spring		
MATH 426	Calculus II	4
MATH 445 or CS 410P or CS 410C	Mathematics and Applications with MATLAB or Introduction to Scientific Programming/Python or Introduction to Scientific Programming/C	4
Discovery Course		4
Discovery Course		4
Credits		16
Second Year		
Fall		
MATH 531	Mathematical Proof	4
MATH 539 or MATH 644	Introduction to Statistical Analysis or Statistics for Engineers and Scientists	4
EDUC 500	Exploring Teaching	4
Discovery Course		4
Credits		16
Spring		
MATH 601	Exploring Mathematics for Teachers I	4
MATH 545 or MATH 645 or MATH 525	Introduction to Linear Algebra or Linear Algebra for Applications or Linearity I	4
MATH 790	Historical Foundations of Mathematics	4
Discovery Course		4
Credits		16
Third Year		
Fall		
MATH 700	Introduction to Mathematics Education	4
MATH 760	Geometry	4
Discovery Course		4
Elective Course		4
Credits		16

Spring		
MATH 624	Analysis of Secondary School Mathematics A (Number Systems & Functions)	4
MATH 709	Teaching of Mathematics in Grades 6-12	4
EDUC 605	Educational Perspectives in Critical Times	4
Elective Course		4
Credits		16

Fourth Year

Fall		
MATH 626	Analysis of Secondary School Mathematics B (Geometry, Statistics, & Probability)	4
MATH 761	Abstract Algebra	4
Elective Course		4
Elective Course		4
Credits		16

Spring		
MATH 797	Senior Seminar	4
EDUC 701	Human Development & Learning: Cultural Perspectives	4
MATH Elective		4
Elective Course		4
Credits		16
Total Credits		129

Student Learning Outcomes

Program Learning Outcomes Mathematics Concepts, Practices, and Curriculum. Well-prepared beginning teachers of mathematics:

- Demonstrate robust knowledge of mathematical and statistical concepts that underlie what they encounter in teaching of K-8 or secondary mathematics.
- Engage in appropriate mathematical and statistical practices, and use technological tools to solve mathematical problems, and incorporate educational technology in their teaching.
- Analyze and interpret mathematical curricula, assessments, and standards documents.
- Analyze and interpret students' mathematical work.

Pedagogical Knowledge and Practices for Teaching Mathematics. Well-prepared beginning teachers of mathematics:

- Demonstrate strong foundations of pedagogical knowledge, and effective and equitable mathematics teaching practices.
- Construct instructional explanations, develop tasks, lesson plans and unit plans, that advance students' mathematical understanding.
- Recognize common patterns of student thinking related to particular mathematical topics, and articulate ways of supporting students' mathematical thinking.

Productive dispositions. Well-prepared beginning teachers:

- Demonstrate positive and productive dispositions toward mathematics as a discipline, towards students as learners of mathematics and towards teaching mathematics in ways that support students' sense making, understanding, and reasoning.

Disclosures

Professional Licensure/Certification Disclosures

The University of New Hampshire offers a number of academic programs designed to lead to professional licensure or certification in New Hampshire. However, completing a UNH degree/program does not guarantee professional licensure or certification. Eligibility may also depend on factors like years of work experience, professional examinations, passing a background check, and other criteria.

UNH does not guarantee that its professional licensure programs will satisfy the criteria of professional licensure boards in other states. Some states maintain different requirements for professional licensure or certification and requirements can change frequently. Federal regulations require the University to make public disclosure of certain information regarding professional licensure or certification programs, regardless of the modality the program is offered (i.e., in-person or online). The University provides guidance below but recommends students contact their state/territory licensing or certification board to ensure a program meets specific state/territory requirements.

Visit the Office of the Registrar's [website](#) for information about whether this program meets professional licensure requirements in your state.