

MATHEMATICS EDUCATION MAJOR: SECONDARY EDUCATION OPTION (B.S.)

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

Description

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

Students electing the four-year option leading to secondary school 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 527	Differential Equations with Linear Algebra	4
MATH 528	Multidimensional Calculus	4
MATH 531	Mathematical Proof	4
MATH 539	Introduction to Statistical Analysis	4
MATH 545	Introduction to Linear Algebra	4
or MATH 645	Linear Algebra for Applications	
MATH 624	Analysis of Secondary School Mathematics	4
MATH 700	Introduction to Mathematics Education	4
MATH 709	Teaching of Mathematics in Grades 6-12	4
MATH 760	Geometry	4
MATH 761	Abstract Algebra	4
MATH 790	Historical Foundations of Mathematics	4
Capstone: Select one of the following		
MATH 797	Senior Seminar	4
MATH 799	Senior Thesis	2 or 4
Other Required Courses		
EDUC 500	Exploring Teaching	4
EDUC 605	Educational Perspectives in Critical Times	4
EDUC 701	Human Development & Learning: Cultural Perspectives	4
Total Credits		74-76

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

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	Mathematics and Applications with MATLAB	4
or CS 410P	or Introduction to Scientific Programming/Python	
or CS 410C	or Introduction to Scientific Programming/C	
Discovery Course		4
Discovery Course		4
Credits		16

Second Year

Fall		Credits
MATH 528	Multidimensional Calculus	4
MATH 531	Mathematical Proof	4
EDUC 500	Exploring Teaching	4
Discovery Course		4
Credits		16

Spring

MATH 527	Differential Equations with Linear Algebra	4
MATH 545	Introduction to Linear Algebra	4
or MATH 645	or Linear Algebra for Applications	

MATH 790	Historical Foundations of Mathematics	4
Discovery Course		4
Credits		16
Third Year		
Fall		
MATH 539	Introduction to Statistical Analysis	4
MATH 700	Introduction to Mathematics Education	4
MATH 760	Geometry	4
Discovery Course		4
Credits		16
Spring		
MATH 709	Teaching of Mathematics in Grades 6-12	4
MATH 761	Abstract Algebra	4
Discovery Course		4
Writing Intensive Course		4
Credits		16
Fourth Year		
Fall		
MATH 797 or MATH 799	Senior Seminar or Senior Thesis	4
EDUC 605	Educational Perspectives in Critical Times	4
Writing Intensive Course		4
Elective Course		3
Credits		15
Spring		
MATH 624	Analysis of Secondary School Mathematics	4
EDUC 701	Human Development & Learning: Cultural Perspectives	4
Elective Course		4
Elective Course		4
Credits		16
Total Credits		128

- 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.

Student 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.