MATH EDUCATION MAJOR: ELEMENTARY/MIDDLE SCHOOL EDUCATION K-8 OPTION (B.S.)

https://ceps.unh.edu/mathematics-statistics/program/bs/mathematics-education-elementarymiddle-school-option

Description

Beginning in the 2022/23 academic year, the Math Education Major: Elementary/Middle School Education K-8 option will no longer be accepting new students. Current students will continue to have access to the same high-quality education and resources until they graduate.

This professional degree program prepares students for teaching mathematics at the elementary and/or middle school level. The program is coordinated with the education department's teacher certification programs. For the elementary option, full certification requires the five-year program. Students may complete the degree requirements for middle school option with full teacher certification in either four or five years.

Students electing the four-year option leading to middle 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 for either option 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

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.

Requirements for admission to student teaching include receiving credit for EDUC 500 and a minimum cumulative 2.8 GPA.

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
MATH 545	Introduction to Linear Algebra	4
or MATH 645	Linear Algebra for Applications	
MATH 621	Number Systems for Teachers	4
MATH 622	Geometry for Teachers	4
MATH 623	Probability and Statistics for Teachers	4
MATH #625	Functions and Algebra for Teachers	4
MATH 700	Introduction to Mathematics Education	4
MATH 703	Teaching of Mathematics in Grades K-5	4
or MATH 709	Teaching of Mathematics in Grades 6-12	
MATH 760	Geometry	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		
PHYS 406	Introduction to Modern Astronomy	4
EDUC 500	Exploring Teaching	4
EDUC 605	Educational Perspectives in Critical Times	4
EDUC 701	Human Development & Learning: Cultural Perspectives	4
Total Credits		**78-80**

Note: EDUC 703F Teaching Elementary School Science, EDUC 703M Teaching Elementary Social Studies, EDUC 706 Teaching & Learning Literacy in the Elementary Classroom, and EDUC 751A Inclusive Elementary Education: Literacies and Learning for Diverse Learners are requirements for K-6 or K-8 certification.

EDUC 706 Teaching & Learning Literacy in the Elementary Classroom must be completed prior to the Internship (EDUC 900A Internship and Seminar in Teaching and EDUC 901A Internship and Seminar in Teaching).

Degree Plan

First Year		
Fall		**Credits**
MATH 425	Calculus I	4
PHYS 406	Introduction to Modern Astronomy	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
ENGL 401	First-Year Writing	4
Discovery Course		4
	Credits	**16**
Second Year		
Fall		
MATH 539	Introduction to Statistical Analysis	4
MATH 621	Number Systems for Teachers	4
EDUC 500	Exploring Teaching	4
Discovery Course		4
	Credits	**16**
Spring		
MATH 531	Mathematical Proof	4
MATH 545 or MATH 645	Introduction to Linear Algebra or Linear Algebra for Applications	4
MATH 622	Geometry for Teachers	4
Discovery Course		4
	Credits	**16**
Third Year		
Fall		
MATH 623	Probability and Statistics for Teachers	4
MATH 700	Introduction to Mathematics Education	4
MATH 760	Geometry	4
Discovery Course		4
	Credits	**16**
Spring		
MATH #625	Functions and Algebra for Teachers	4
MATH 703 or MATH 709	Teaching of Mathematics in Grades K-5 or Teaching of Mathematics in Grades 6-12	4
MATH 790	Historical Foundations of Mathematics	4
Discovery 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		4
	Credits	**16**
Spring		
EDUC 701	Human Development & Learning: Cultural Perspectives	4
Writing Intensive Course		4
Elective Course		4
Elective Course		4
	Credits	**16**
	Total Credits	**129**

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.
- 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.