



Master of Education

Mathematics (1-6, 5-8, or 8-12)

For licensure: 38* credits, 4 terms full-time • Non-licensure: 33 credits, 3 terms full-time
• Program approved by the Mass. Dept. of Elementary & Secondary Education (ESE)

The Teacher Education Program at Cambridge College is awarded TEAC accreditation by the Inquiry Brief Commission of the Council for the Accreditation of Educator Preparation (CAEP) for a period of five years, from May 2014-May 2019. The accreditation does not include individual education courses that the EPP offers to P-12 educators for professional development, re-licensure, or other purposes.

The MATHEMATICS EDUCATION program prepares students to effectively teach mathematics at the elementary (1-6), middle (5-8), and high school levels (8-12). Students learn the concepts, language, and procedures of mathematics; and develop competence in mathematics and interest in applying it to the world around them.

Learning Outcomes — Teacher candidates will understand and apply mathematical problem solving processes and construct rigorous mathematical arguments. They will understand how mathematics is best learned and taught, supporting positive attitudes towards the subject. They will make connections among ideas in mathematics and other fields. They will use varied representations of mathematical ideas to communicate mathematical thinking and deepen students' understanding. They will embrace technology as an essential tool for mathematics. They will become proficient in computation, understand relationships among quantities, use measurement concepts and tools, spatial visualizations and geometric modeling. They will understand data analysis, statistics, and probability. For middle and high school levels, they will also understand concepts, techniques and applications of the calculus and discrete mathematics.

Careers — The program is ideally suited for: a) adults who want to work with and help children learn the language of mathematics; b) current teachers who wish to add mathematics as a new subject area; c) those wishing to become National Board Certified mathematics teachers, mathematics coaches, mathematics specialists, and mathematics coordinators/directors; d) non-mathematics majors who wish to earn a highly qualified title to their academic experience to enhance and broaden their teaching careers; and e) career changers who wish to pursue a more meaningful career in working with children. Teachers of mathematics at all school levels remain in high demand nationally; and individuals coming from careers in business, engineering, finance and the military are often very successful in relating the importance of the mathematics they teach, to the real world they have worked in for many years.

Professional Seminar & Project9 credits

EME691N-693N Professional Seminar in Mathematics - Initial Level (3 terms @ 2 credits)

EME800 Independent Learning Project (take with Seminar III)

Courses 24 credits

Take courses for your licensure level 1-6 5-8 . . .8-12

- MAT603 Arithmetic to Algebra: Developing Math Patterns & Ideas
MAT605 Technol in Math Learning & Teaching
MAT607 College Algebra
MAT609 Euclidean Geometry
MAT611 Calculus I
MAT613 Discrete Math
MAT615 History of Math
MAT618 Math Essentials
MAT621 Data Analysis
MAT623 Teaching Numerical & Geometric Structures
MAT625 Number Theory
MAT627 Abstract Algebra
MAT629 Non-Euclidean Geometry
MAT631 Calculus II
MAT633 Probability & Statistics
MAT635 Applied Math

Practicum Prerequisites

- Pass all MTEL teacher tests required for this license: Communication & Literacy, and Elementary Mathematics, Middle School Mathematics, or Mathematics (8-12).
SEI605 Sheltered English Immersion (3 additional credits) or ESE-endorsed course or SEI MTEL.
Pre-Practicum — 90 hours in diverse settings (0 credit).
Pass all required courses including Independent Learning Project.

Practicum (licensure students only)5 credits

Practicum in Mathematics—300 hours

Guided and evaluated by a licensed/certified math teacher in the classroom and Cambridge College mathematics supervisor. Practicum locations are subject to ESE regulations and must be approved by the program chair. Students are responsible for discussing options for practicum with the program chair.

MAT790A Practicum 1-6

MAT790B Practicum 5-8

MAT790C Practicum 8-12

MAT791 Practicum Seminar in Mathematics Teaching (2 credits)

Electronic exit portfolio (Taskstream) required for credit.

All courses 3 credits except as noted.





Mathematics (1-6, 5-8, or 8-12)

Graduate Certificate

Mathematics Specialist Certificate

12 credits, 2 terms

COURSE OFFERINGS PLAN / PREREQUISITES

Professional Seminar, Independent Learning Project	every term
MAT618 Math Essentials	every term
MAT623 Teaching Numerical & Geometric Structures.	every term
MAT708 Diagnosis & Remediation of Learning Problems in Mathematics	every term
MAT605 Technol. in Math (preqs. 607, 609, 611, 613)	Fall
MAT609 Euclidean Geometry	Fall
MAT625 Number Theory (req. MAT611)	Fall
MAT611 Calculus I (preqs. MAT607, 609)	Fall, Spring
MAT615 History of Math (preqs. MAT607, 609, 611)	Fall, Spring
MAT790-791 Practicum and Practicum Seminar	Fall, Spring
MAT631 Calculus II (req. MAT611)	Spring
MAT613 Discrete Math (preqs. MAT607, 609)	Spring
MAT621 Data Analysis	Spring
MAT635 Applied Math (preqs. MAT611, 631)	Spring
MAT603 Arithmetic to Algebra	Summer
MAT607 College Algebra	Summer
MAT627 Abstract Algebra (req. MAT607)	Summer
MAT629 Non-Euclidean Geometry (req. MAT609)	Summer
MAT633 Probability & Statistics (req. MAT613)	Summer

Prerequisites as listed or program chair's approval.

This program is best suited for current classroom teachers who wish to add mathematics as a new subject area to their professional skills; and to new teacher candidates entering the teaching profession who are non-mathematics majors, and who wish to earn a highly qualified title to their academic experience and broaden their teaching careers as a mathematics specialist or mathematics coach.

Choose math specialist option in elementary/middle school or high school math, and take courses as outlined below.

3-credit courses for your Math Specialist choice		Elem/Middle School	High School
MAT603	Arithmetic to Algebra: Developing Math Patterns & Ideas	•	
MAT623	Teaching Numerical & Geometric Structures.	•	
MAT615	History of Math.	•	•
MAT708	Diagnosis & Remediation of Learning Problems in Math	•	•
MAT611	Calculus I		•
MAT609	Euclidean Geometry		•

Admission requirements: Bachelor's degree and other general requirements. Applicants for levels 5-8 and 8-12 must take a Cambridge College math placement test. Based on test results and program chair's recommendation, selected lower level math courses may be required before initial licensure courses.

Required to enter program for licensure:

- Pass Massachusetts Communication & Literacy Test (MTEL).
- 3.0 GPA at entry; must be maintained throughout program.

***Program credits:** Total does not include the SEI requirement, which has multiple pathways for completion.

Non-licensure option: All program components are required except the Practicum, Practicum Seminar and teacher tests. Non-licensure students must complete all pre-practicum hours embedded in the courses.

Program and course schedule subject to change.

Program chair: Nicholas Rubino, PhD • nicholas.rubino@cambridge-college.edu

