

Master of Education

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

For licensure: 41 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. The program builds on the College's successful student-centered curriculum that links theory and practice in a collaborative learning environment.

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.

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:

- Massachusetts Educator Personnel ID (MEPID) number.
- Pass Massachusetts Communication & Literacy Test.
- 3.0 GPA at entry; maintained throughout program.

Non-licensure option: All program components are required (including pre-practicum hours) *except* for the SEI, Practicum, Practicum Seminar, and MTEL exams.

Program and course schedule subject to change.

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

EME691N-	-693N Professional Seminar in Mathematics - Initial Level (3 terms @ 2 credits)
EME800	Independent Learning Project (take with Seminar III)
Courses	24 credits
Take cours	ses for your licensure level
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

Data Analysis

Number Theory

Abstract Algebra......

Teaching Numerical & Geometric

Professional Seminar & Project9 credits

Practicum Prerequisites

MAT621

MAT623

MAT625

MAT627

MAT629

MAT631

MAT633

MAT635

- 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 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.

MAT790**A** Practicum 1-6 MAT790**B** Practicum 5-8 MAT790**C** Practicum 8-12

MAT791 Practicum Seminar in Mathematics Teaching (2 credits)

Electronic exit portfolio (Taskstream) required for credit.

Continued

(All courses @ 3 credits except as noted.)





MEd Continued

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

Graduate Certificate

Mathematics Specialist Certificate

12 credits, 2 terms

COURSE OFFERINGS PLAN / PREREQUISITES

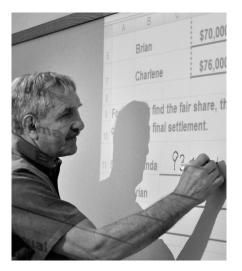
Professional Seminar, Independent Learning Project every term		
MAT618	Math Essentials every term	
MAT623	Teaching Numerical & Geometric	
	Structuresevery term	
MAT708	Diagnosis & Remediation of Learning Problems in Mathematics every term	
MAT605	Technol. in Math (pregs. 607, 609, 611, 613) Fall	
MAT609	Euclidean Geometry Fall	
MAT625	Number Theory (preq. MAT611) Fall	
MAT611	Calculus I (preqs. MAT607, 609) Fall, Spring	
MAT615	History of Math (preqs. MAT607, 609, 611) Fall, Spring	
MAT790-79	91 Practicum and Practicum Seminar Fall, Spring	
MAT631	Calculus II (preq. MAT611) Spring	
MAT613	Discrete Math (preqs. MAT607, 609)Spring	
MAT621	Data Analysis	
MAT635	Applied Math (preqs. MAT611, 631) Spring	
MAT603	Arithmetic to Algebra Summer	
MAT607	College Algebra Summer	
MAT627	Abstract Algebra (preq. MAT607) Summer	
MAT629	Non-Euclidean Geometry (preq. MAT609) Summer	
MAT633	Probability & Statistics (preq. 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 c	ourses Elem/Middle High Nath Specialist choice School Schoo	l
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	



(All courses @ 3 credits except as noted.)

