Initial Licensure • Non-Licensure

Master of Education

Mathematics (1-6, 5-8, or 8-12) • CIP code 131311

For licensure: 38-41* 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.

Program Description — 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. Program completers are career-ready, technologically savvy, exhibit inter-cultural competence and are equipped to advance social justice.

Learning Outcomes — Graduates have strong mathematical content knowledge and the skills to help students they teach in accessing and learning that content and support positive attitudes towards the subject. They understand and apply mathematical problem solving processes and construct rigorous mathematical arguments. They make connections among ideas in mathematics and other fields, using varied representations of mathematical ideas to communicate mathematical thinking and deepen students' understanding. They embrace technology as an essential tool for mathematics, are proficient in computation, understand relationships among quantities, use measurement concepts and tools, spatial visualizations and geometric modeling and understand data analysis, statistics, and probability. Graduates who teach in the secondary levels, understand the concepts, techniques and applications of calculus and discrete mathematics. They utilize inclusive practices to create a safe and collaborative learning environment that fosters positive socio-emotional development. They set high expectations for all students; implement well-structured lessons, with measurable assessments of learning; and engage in ongoing reflection on practice. They personalize their learning through an Independent Learning Project that enhances their preparedness as a professional educator.

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 & Project ..... 9 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			•

Note: Asterisk (*) indicates pre-practicum experience required.

Math placement test: 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.

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

***Program credits:** 38 credits total if SEI is completed before enrollment, 41 credits if SEI is completed at Cambridge College.

Program and course schedule subject to change.

Program chair: John O'Keefe, MS
• john.okeefe@cambridgecollege.edu

Continued

(All courses @ 3 credits except as noted.)

MEd
Continued

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

Graduate Certificate

Mathematics Specialist Certificate • CIP code 131311

12 credits, 2 terms

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 or ESE-endorsed course or SEI MTEL.
- Pre-Practicum — successfully complete 90 hours in diverse settings (0 credit).
- Pass all required courses including Independent Learning Project.
- Submit Practicum Application and Practicum Placement Approval Form.

Practicum & Seminar (licensure students only). . . . .5 credits

Practicum in Mathematics — 300 hours (3 credits)

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 discussed with the program chair and approved by the pre-practicum/practicum coordinator.

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.

Program Description — 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.

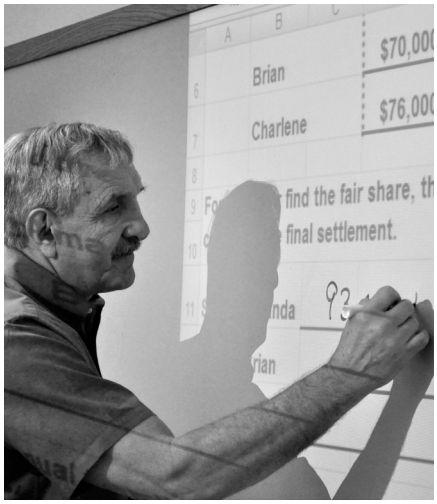
3-credit courses for your Math Specialist choice		Elem/Middle School	High School
MAT603	Arithmetic to Algebra: Developing Math Patterns & Ideas.	•	
MAT623	Teaching Numerical & Geometric Structures.	•	
MAT615	History of Math	•	•
MAT708	Diagnosis & Remediation of Learning Problems in Math	•	•
MAT611	Calculus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

COURSE OFFERINGS PLAN / PREREQUISITES

Professional Seminar, Independent Learning Project		Fall, Spring
MAT618	Math Essentials	Fall, Spring
MAT623	Teaching Numerical & Geometric Structures.	Fall, Summer
MAT708	Diagnosis & Remediation of Learning Problems in Mathematics	Fall, Spring
MAT605	Technol. in Math (preqs. 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
MAT790-791	Practicum and Practicum Seminar	Fall, Spring
MAT631	Calculus II (preq. MAT611)	Spring
MAT613	Discrete Math (preqs. MAT607, 609)	Spring
MAT621	Data Analysis	Summer
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.

Course delivery format of all courses is face-to-face (F2F).



(All courses @ 3 credits except as noted.)