



Master of Education

# General Science (1-6 or 5-8)

- CIP code 131316 • For licensure: 32-35\* credits, 5-6 terms full-time
- Program approved by the Mass. Dept. of Elementary & Secondary Education (DESE)
- Non-licensure : 30 credits, 4 terms full-time

## Program Description

The General Science Education program provides essential science content, integrated with best practices in hands-on, inquiry-based science education. The curriculum is firmly rooted in the 2016 Massachusetts science education model with a balance of earth, life, physical and engineering sciences. The program focuses on candidates' understanding of how to integrate the eight Practices of Science with the Subject Matter Knowledge Content standards in PK-8 General Science. Students experience a blend of seated and online content science courses. Program completers are career-ready, technologically savvy, exhibit inter-cultural competence and are equipped to advance social justice.

## Learning Outcomes

Graduates demonstrate the disposition, knowledge and skills expected of professional educators articulated by state and national accreditation bodies. They design and conduct scientific inquiries to test scientific hypotheses, using appropriate tools and techniques to gather, analyze, and interpret data; develop descriptions, explanations, predictions, and models using evidence, communicate scientific procedures and explanations; and know how science, technology, and math inform each other and serve as mechanisms for inquiry into the nature of the universe. They use "best practices" in teaching inquiry-based science and develop a balanced approach to hands-on science instruction using appropriate methodology and appropriate procedures as described in state standards. They set high expectations and create a safe and collaborative learning environment to engage all students in their learning. They implement well-structured lessons with measurable assessments of learning and engage in ongoing reflection on practice.

## Careers

Elementary science specialist, grades preK-5; middle school general science teacher/earth, life, physical and engineering sciences, grades 5-8; science museum educator, nature center specialist/guide, aquarium and zoo educator.

**Non-licensure option:** Eleven credits of science content coursework are required. These courses must be selected in consultation with the program chair.

**\*Licensure program credits:** 32 credits total if SEI is completed before enrollment, 35 credits if SEI is completed at Cambridge College.

**Program subject to change.**

**Program chair:** John Papadonis, M.S.  
• john.papadonis@cambridgecollege.edu

## Science Methods..... 19 credits

- EED 735 Program Portfolio Integration (0 credit) . . . . every term
- SCI 680 Attaining Science Literacy. . . . . Fall
- 1-6: or** ELE 653 Teaching Science, Engineering, and Technology . . . . . Fall, Spring

## Methods & Materials for Teaching:

- SCI 686 Physical Science. . . . . Fall
- SCI 690 Teaching Engineering & Technology (2 credits). . . . . Fall
- SCI 692 Logistics of Teaching Science (2 credits). . . . . Spring
- SCI 682 Life Science . . . . . Spring
- SCI 684 Earth Science. . . . . Spring
- SCI 688 Middle School Chemistry . . . . . Summer

## Science Content..... licensure: select 8 credits

non-licensure: select 11 credits

Online courses @ 1 credit

*Students should select those courses that reflect their weakest area of preparation and support their abilities to teach the science content required for their area of licensure*

- SCI 609 Transfer of Energy. . . . . Fall
- SCI 611 Ocean Science. . . . . Fall
- SCI 619 Teaching Project-Based Science. . . . . Fall
- SCI 627 Teaching Chemistry Through Inquiry . . . . . Fall
- SCI 603 Electricity & Magnetism. . . . . Spring
- SCI 607 Structure of the Earth . . . . . Spring
- SCI 613 Earth's Place in the Universe. . . . . Spring
- SCI 629 Practical Meteorology . . . . . Spring
- SCI 601 Aquatic Ecology . . . . . Summer
- SCI 615 Forces in Motion. . . . . Summer
- SCI 617 Earth's History . . . . . Summer
- SCI 600 Cell Biology . . . . . Summer

All courses offered at least once/year.



(All courses @ 3 credits except as noted.)



M.Ed.

Continued

# General Science (1-6 or 5-8)

## Practicum Prerequisites ..... 1-4 credits

- Pass all MTELEs required by Massachusetts for this license:  
Communication & Literacy test and:  
1-6: Successful completion of coursework  
5-8: General Science 5-8 MTEL test
- SEI 605 Sheltered English Immersion or DESE-endorsed course or SEI MTEL.
- Pass all required courses.
- EDU 704 Practicum Readiness (1 credit)
- Submit Practicum Application and Placement Approval Forms.

## Practicum & Seminar (licensure students only) . . . . 4 credits

**Practicum** – 300 hrs in an elementary (1-6) or middle school (5-8) science classroom (2 credits)

SCI 794**A** Practicum 1-6 • SCI 794**B** Practicum 5-8

Guided and evaluated by a licensed/certified general science teacher in the classroom and a Cambridge College general science supervisor. Practicum locations are subject to DESE regulations and must be discussed with the program chair and approved by the pre-practicum/practicum coordinator.

### SCI 791 Practicum Seminar (2 credits)

Electronic exit portfolio (Tevera) required for credit.

(All courses @ 3 credits except as noted.)