

# SCIENCE MATHEMATICS AND TECHNOLOGY FOR STUDENTS MATRICULATED AFTER JAN. 2009 BUT BEFORE SEPT. 7, 2021

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- Biology
- Chemistry
- Computer science
- Environmental science
- Information systems
- Information technology
- Mathematics
- Physics
- Technology

## Program Goals

Concentrations in science, mathematics and technology (SMT) may include work in the natural sciences (physics, chemistry and biology), mathematics, computer science and a range of technological, applied science and health-related fields. Organizing frameworks may be disciplinary, interdisciplinary, thematic, problem oriented or professional/vocational.

Since knowledge in science, mathematics and technology is rapidly and continually evolving, students must develop an awareness of the field or area as an ongoing area of inquiry, including knowledge of recent developments. They should develop skills for acquiring knowledge independently, in order to avoid scientific and technological obsolescence.

SMT degrees should demonstrate both breadth and depth. Degrees should be designed to provide the student with an understanding of the definition and scope of a field or area, including its fundamental laws and concepts. SMT students also should pursue a progression of study that leads to the development of in-depth knowledge and skills, and an increasingly critical and sophisticated understanding of the theoretical and conceptual models of the field.

## Program Objectives

Students with degree programs in science, mathematics and technology should demonstrate:

- An understanding of the definition and scope of a field or area including its fundamental laws and concepts, including:
  - A working knowledge of the vocabulary of a field.
  - An understanding of fundamental principles by applying them to a variety of problems or situations.
- Basic competencies needed to work in science, mathematics or technology, such as:
  - Working knowledge of needed experimental techniques, including data acquisition and interpretation.
  - Working knowledge of needed mathematics.
  - Communication skills appropriate to their fields including reading, writing, and presentation skills.
  - Familiarity with established computer applications to the particular field of interest.
- A critical perspective that allows them to compare and evaluate theories, models and experimental work.
- An awareness of the wider context in which science and technology operate, i.e. understand the relationships between science, technology, and society.

Additional specific guidelines have been developed for concentrations in the following areas: