



Foundation: Mathematical Sciences

The development of formal reasoning and abstract thought has been a defining characteristic of civilization. Through the study of the mathematical sciences, students will develop their ability to reason and solve problems with abstract ideas or quantitative information. Full participation in many professional and public policy discussions requires the ability to express scientific, economic, or social issues in quantitative terms. Study of the concepts, history, contexts, and methodologies of the mathematical sciences assists students in becoming quantitatively literate citizens.

Courses introduce students to the foundations of mathematical, logical, and quantitative reasoning. They develop each student's mathematical, statistical, quantitative, or logical reasoning skills in ways that allow these skills to be transferred or used in other content areas.

Knowledge Student Learning Outcomes

Students will:

1. Explain principles and questions that define computer science, logic, mathematics, or statistics.
2. Apply techniques for problem solving including recognition of key elements, the choice of suitable methods for solving a problem, and the appropriate application of these methods.

Skills Student Learning Outcome 1 (choose one of the following):

Graduates are proficient in:

- a) Critical Thinking: Comprehensively evaluate issues, ideas, artifacts, or events before forming a conclusion; or
- b) Quantitative Literacy: Work effectively with numerical data.

Skills Student Learning Outcome 2 (choose one of the following):

Graduates are proficient in:

- a) Collaboration: Effectively work on a team. *{Students must participate in a group project conducted over a significant portion of the semester}*; or
- b) Problem Solving: Design and evaluate an approach to answer an open-ended question or achieve a desired goal.