

# CS 161 : COMPUTER SCIENCE I

---

## Transcript title

Computer Science I

## Credits

4

## Grading mode

Standard letter grades

## Total contact hours

50

## Lecture hours

30

## Other hours

20

## Prerequisites

MTH 112 or MTH 251.

## Recommended preparation

CS 160.

## Course Description

Examines the nature of computer programming; includes discussion of a computer model, methods of problem solving and programming structures; information representation; algorithm construction; object-oriented design using C++.

## Course learning outcomes

1. Translate a problem statement into an appropriate algorithm containing arithmetic, relational, and logical expressions.
2. Translate the semantics of an algorithm into the syntax of a computer programming language.
3. Develop an object-oriented solution to a problem using classes, methods, and objects.
4. Develop proper error handling for possible run-time errors.
5. Develop the debugging skills to help determine errors in a computer program.
6. Understand how to effectively test a solution for correctness.
7. Describe a program implementation in terms of a natural language.

## Content outline

- Algorithms
- Introduction to C++
- Decision Structures
- Iteration
- Functions
- Arrays and Vectors
- Searching

## Required materials

Textbook is required.

## General education/Related instruction lists

- Science not Lab