

# CSCI 110 Outline

## Fundamentals of Computer Science

*Starting Out with Programming Logic and Design and  
C++/Java/Python Language Companion*

by Tony Gaddis, Sixth Edition, 2023, Pearson (required)

Approved: Spring 2023

Effective: Fall 2023

Topics	Sections	Time
Introduction: hardware, software, how computers store data, how a program works; use supplement for hexadecimal and IEEE 754 floating point.	1.1 – 1.5	5 hours
Input, Processing, and Output: data types, variables, named constants, assignment, calculations, input, output, designing a program, documenting a program.	2.1 – 2.9	5 hours
Decision and Repetition Structures: decision structures with if statement, nested decision structures, relational and logical operators, repetition structures with while loop, do-while loop, and for loop, nested loops, sentinel loops, input validation loops, calculating running totals, menu-driven programs.	3.1 – 3.8 4.1 – 4.7 7.1 – 7.4 11.1 – 11.5	7 hours
Modules and Functions: defining and calling a module, passing arguments by value and by reference, local and global variables, library functions, writing your own functions.	5.1 – 5.6 6.1 – 6.4	6 hours
Arrays, Text Processing, Sorting, and Searching: array basics, processing an array, parallel arrays, two-dimensional arrays, process characters, bubble sort, selection sort, insertion sort, sequential search, binary search.	8.1 – 8.7 9.1 – 9.5 12.1 – 12.3	7 hours
Files: file input and output, using loops to process files, using files and arrays to process records.	10.1 – 10.6	4 hours
Recursion: introduction to recursion, problem solving with recursion, examples of recursive algorithms.	13.1 – 13.4	4 hours
Object-Oriented Programming: procedural and object-oriented programming, classes, inheritance.	14.1 – 14.7	2 hours

Submitted by: Vo, Atanasio, and McMullin

### Notes:

1 hour = 1 hour of face time

16-week Term: 1 week = 2.8333 hours (face time)

6-week Term: 1 week = 7.5 hours (face time)

The above outline allows 3 hours for review and exams, not counting holidays.

Keep in mind that most holidays affect MW or MWF classes, so this timeline – NOT the topical outline – may need adjustment