**CSCI 110 Outline**

Fundamentals of Computer Science *Starting Out with Programming Logic and Design and C++/Java/Python Language Companion*

by Tony Gaddis, Fifth Edition, 2019, Pearson (required)

Approved: Spring 2018 Effective: Fall 2018

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| **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 |
| 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. | 3.1 – 3.6  6.1 – 6.4 | 6 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. | 4.1 – 4.8  5.1 – 5.7  7.1 – 7.4  11.1 – 11.5 | 7 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 and CSCI Curriculum Committee

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