Computing Science Course Outlines

CMPT 120 - D400 Intro.Cmpt.Sci/Programming I

Instructor(s): Toby Donaldson  
SFU Surrey

Calendar Objective/Description:
Intro.Cmpt.Sci/Programming I

Instructor's Objectives:
An elementary introduction to computing science and computer programming, suitable for students with little or no programming background. Students will learn fundamental concepts and terminology of computing science, acquire elementary skills for programming in a high-level language, e.g. Python. The students will be exposed to diverse fields within, and applications of computing science. Topics will include: pseudocode; data types and control structures; fundamental algorithms; recursion; reading and writing files; measuring performance of algorithms; debugging tools; basic terminal navigation using shell commands. Treatment is informal and programming is presented as a problem-solving tool.

Prerequisites:
see go.sfu.ca

Topics:
- Algorithms and computational thinking
- Procedural programming in Python
- Data types and control structures
- Application areas within computing science
- Fundamental algorithms, including searching, sorting, basics of recursion
- Computability and complexity, introduction
- Basics of binary encoding

Grading:
There will be assignments and multiple quizzes/exams. A more detailed marking scheme and technology details will be provided in the first class of the semester.

Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C- or better).

Required Books:
Think Python - How to Think Like a Computer Scientist: Interactive Edition, , https://runestone.academy/runestone/books/published/thinkcspy/index.html, , This interactive text is available online for free

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