Introduction to Software Development

MET CS 300 O1
Course Format (Online)

Instructor Name: Kuang-Jung Huang
Office hours: by appointment

Course Description

This course introduces basic concepts in discrete mathematics, computer systems and programming that are necessary for modern computing systems. It also develops analytic and logical thinking and prepares students to take graduate-level courses in software development degree. This course first reviews the basic concepts in discrete mathematics including logic, sets, functions, relations and combinatorics. Then it discusses the fundamental concepts in computer systems such as computer organization, basic OS concepts, CPU scheduling, memory management, process management and synchronization. Concurrently with the above mathematics and systems studies, programming concepts are introduced and practiced throughout the whole course using Python.

Books

Starting Out with Python (4th Edition) by Tony Gaddis
Publisher: Pearson; ISBN-10: 0134444329

This book can be purchased from Barnes and Noble at Boston University.

Courseware

https://onlinecampus.bu.edu/webapps/blackboard/content/listContent.jsp?course_id=_61260_1&content_id=_7379238_1

Class Policies

1) **Attendance & Absences** – Live classrooms: every Wednesday 8:30-9:30pm and Sunday 8:30-9:30pm until end of term.
2) **Assignment Completion & Late Work** – programming lab and assignment shall be submitted to online courseware by the due date (see the list of due dates in class meeting section). All late submissions are subject to 20% late penalty.
3) **Academic Conduct Code** –Cheating and plagiarism will not be tolerated in any Metropolitan College course. They will result in no credit for the assignment or

examination and may lead to disciplinary actions. Please take the time to review the Student Academic Conduct Code: http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.html. This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. On the contrary – you should share your thoughts, questions and solutions. Naturally, if you choose to work in a group, you will be expected to come up with more than one and highly original solutions rather than the same mistakes.

Grading Criteria

Each week will have a Part A--Python--and Part B--Math or Operating Systems. The assignments, quizzes, and labs each week total 12%: 6% for Python programming and 6% Math (for the first three weeks) or Systems (for the second three weeks).

Weekly Python Labs:	0.3% x 6
Weekly Python programming assignments:	5.7% x 6
Weekly Math Quiz:	6% x 3
Weekly System Assignment:	4% x 3
Weekly System Quiz:	2% x 3
Python portion of Final Exam:	14%
Math portion of Final Exam:	7%
Systems Portion of Final Exam:	7%

Class Meetings, Lectures & Assignments

Lectures, Readings, and Assignments subject to change, and will be announced in class as applicable within a reasonable time frame.

Date	Topic	Readings Due	Assignments Due
January 21	Math: Logic Programming: What is Programming?	Module 1 online content Gaddis, Chapter 1: Section 2.3	Programming Lab 1 due Saturday, January 25, at 6:00 AM ET Programming Assignment 1 due Tuesday, January 28, at 6:00 AM ET

			Math Quiz 1 due Tuesday, January 28, at 6:00 AM ET
January 28	Math: Combinations Programming: An Informal Introduction to Python	Module 2 online content Gaddis, Chapters 2 and 3	Programming Lab 2 due Saturday, February 1, at 6:00 AM ET Programming Assignment 2 due Tuesday, February 4, at 6:00 AM ET Math Quiz 2 due Tuesday, February 4 at 6:00 AM ET
February 4	Math: Relations and Functions Programming: Control Flow	Module 3 online content Gaddis, Chapter 4	Programming Lab 3 due Saturday, February 8, at 6:00 AM ET Programming Assignment 3 due Tuesday, February 11, at 6:00 AM ET Math Quiz 3 due Tuesday, February 11, at 6:00 AM ET
February 11	System: Data and Program Presentation and Computer Organization Programming: Defining Function	Module 4 online content Gaddis, Chapter 5	Programming Lab 4 due Saturday, February 15, at 6:00 AM ET Programming Assignment 4 due Tuesday, February 18, at 6:00 AM ET Systems Assignment 1 due Tuesday, February 18, at 6:00 AM ET

			Systems Quiz 1 due Tuesday, February 18 at 6:00 AM ET
February 18	System: Intro to OS, Process and Synchronization Programming: Coding Style	Module 5 online content Gaddis, Chapter 6	Programming Lab 5 due Saturday, February 22 at 6:00 AM ET Programming Assignment 5 due Tuesday, February 25 at 6:00 AM ET Systems Assignment 2 due Tuesday, February 25 at 6:00 AM ET Systems Quiz 2 due Tuesday, February 25 at 6:00 AM ET
February 25	System: Memory Management and Computer Networks Programming: Modules	Module 6 online content Gaddis, Chapters 7, 9, and 12	Programming Lab 6 due Saturday, February 29 at 6:00 AM ET Programming Assignment 6 due Tuesday, March 3 at 6:00 AM ET Systems Assignment 3 due Tuesday, March 3 25 at 6:00 AM ET Systems Quiz 3 due Tuesday, March 3 at 6:00 AM ET