CSCI 235 Syllabus

Hunter College, Summer 2024
Instructor: Sadab Hafiz
https://hunter-college-cs235-summer-2024.github.io/Hunter_CS235_Summer24/
Section 01: MoTuWeTh 09:50 am - 11:24 am ET, Hunter North C108
Section 02: MoTuWeTh 03:20 pm - 04:54 pm ET, Hunter North C102
sh3646@hunter.cuny.edu

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1 Prerequisites

A student must complete CSCI 13500, CSCI 15000 and MATH 15000 with a C or better.

2 Course Objectives

This course is the second in a three-course series, and it is a major stepping-stone in your software development journey. The primary focus of this course is the design and analysis of different algorithms and data structures. Thus, this course will introduce different simple and complex data structures with related algorithms and their use in problem-solving. The course also covers core computer science concepts such as abstraction, algorithm complexity, performance analysis and the tradeoffs between running time, storage size, clarity, and extensibility that are at the core of software design. Similar to CS135, we will use `C++` to implement and study these programming techniques. This course builds upon the ideas in CS135 and aims to enhance your Object-Oriented Programming by introducing new tools such as Templates, Inheritance, Polymorphism. Furthermore, your understanding of pointers and dynamic memory allocation will also be improved. While `C++` is a key part of this course, the goal of this course is to provide an understanding of the concepts so that they can be applied in any programming language you learn in the future.

3 Textbook and Tools

The use of textbooks for this course is **optional**. However, if you plan to use a textbook, the recommended textbook is *Data Abstraction and Problem Solving with C++: Walls and Mirrors*, 7th Edition, Frank M. Carrano, ISBN-13: 978-0134463971.

We will mainly use `C++` programming language. This course is taught on Linux and your programs must be able to run on a Linux environment. The standard Linux/Unix/MacOS `C++` compiler is `g++`. Macs have Unix command line and `g++`. If you want a Linux environment on Windows without installing Linux, follow this excellent tutorial created by Moody. You can also install a `C++` compiler on Windows using MinGW.

The use of an IDE is recommended. If you prefer to code in your terminal directly, take a look at Vim. If you prefer GUI, I recommend VS Code for its simplicity and flexibility. I will use VS Code to show examples during class. However, feel free to explore different IDEs and choose whichever one works best for you.

4 Office-Hours and Communication

Office-Hours will generally be after class or before class, depending on what section you belong to. Feel free to reach out via email to schedule one on one office hours if necessary. Important announcements will be made via Blackboard and in class. I recommend checking your student email frequently as changes in Blackboard are sent to the linked email.

5 Grade Distribution

You can expect to receive your grades in a timely manner. Your final grade will be based on the following:

Final	30%
Midterm	15%
Projects	45%
Weekly Quizzes	10%

There will be no negotiation about the grade distribution. There will be three projects and six weekly quizzes. You can expect the weekly quizzes to be on the last day of each week.

6 Project Submission

Each project will have its own set of instructions that you must follow in order to get full credit. Projects will be submitted to gradescope via GitHub Classroom. You will receive an invitation to gradescope on your email. If you don't receive the invitation or if you have a problem with gradescope, email me your first and last name, emplid, and the email you want to use for gradescope. You will have unlimited submissions to gradescope. However, only your latest submission will count. Proper documentation and coding style will be worth 20 points for each assignment to promote good coding practices.

7 Lateness Policy

Manage your time wisely and avoid procrastination. I understand that things happen in life unexpectedly, which is why each student gets one attempt at submitting an assignment late. This is not the best way to submit because you will have to email me your late submission, which prevents you from looking at gradescope errors. In other words, you only get one shot at submitting it in gradescope. Therefore, use this late attempt only if necessary. Furthermore, the assignment you are trying to submit late has to be an assignment that was due recently. You are allowed the late submission within 7 days of the assignment's due date.

8 Syllabus Compliance

Although the grading policy will remain unchanged, this syllabus is a guide for the course and is subject to change. All changes will be announced in class and via Blackboard.

9 Course Materials

All the materials covered will be listed on the course webpage. Check this webpage frequently to stay up to date with the materials and the assignments.

10 Academic Integrity

We take academic honesty very seriously, and any violation results in sanctions in accordance with Hunter College's procedure. Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures. Academic dishonesty can potentially allow you to pass a course and move on to the next one. But, how long will you be able to do this? Will you try it during a job interview in front of your interviewer? Think about the long-term consequences of not mastering the material and just passing courses.

11 Generative AI Policy

You are allowed and encouraged to use generative AI to learn about concepts. It can be a good supplemental learning tool outside of class. However, using AI to finish your assignments will not be tolerated. Becoming reliant on generative AI can have long term consequences in your career. Code directly copied from generative AI will be counted as a violation of the academic integrity, thus applying the policy stated above.

12 Bullying and Intimidation

Bullying, cyberbullying, online hate, intimidation, threats, harassment, and pressure to share schoolwork are all forms of violence. CUNY holds a zero-tolerance stance towards all such acts. The University is committed to the prevention of any form of bullying, will respond promptly to threats and/or acts, and will protect victims of bullying from retaliation. As a criminal matter, the New York Attorney General defines cyberbullying as the

use of email, websites, instant messaging, chat rooms, text messaging, and digital cameras to antagonize and intimidate others.

13 ADA Compliance

In compliance with the ADA and with Section 504 of the Rehabilitation Act, Hunter College is committed to ensuring educational access and accommodations for all its registered students. Hunter College's students with disabilities and medical conditions are encouraged to register with the Office of AccessABILITY for assistance and accommodation. For information and appointment contact the Office of AccessABILITY located in Room E1214 or call (212) 772-4857 /or VRS (646) 755-3129.

14 CUNY Policy on Sexual-Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College. a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444). b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123. CUNY Policy on Sexual Misconduct Link: http://www.cuny.edu/about/administration/offices/la/Policy-on-SexualMisconduct-12-1-14-with-links.pdf.

15 Departmental Learning Goals

This class satisfies the following learning goals, as set forth by the Computer Science department: (1a) Understanding the basic foundations and relevant applications of mathematics and statistics, particularly those branches related to computer science, by using mathematics to analyze algorithm performance. (1b) Understand the relationship between computer architectures and software systems. (2a) Deep practical knowledge of one widely used programming language (`C++`). (2c) Be able to apply principles of design and analysis in creating substantial programs.

16 Acknowledgements

The material used in this course were adapted from materials publicly or personally shared with me. The course aims to mimic the same course taught by Professor Ligorio during Spring 2024 semester.