COMPSCI 1XC3

Computer Science Practice and Experience: Development Basics

Pedram Pasandide

McMaster University

Spring/Summer 2025

1   Contact Information

Instructor

Pedram Pasandide   pasandip@mcmaster.ca

My Office Hours

Meetings will be held via Microsoft Teams or in my office (ITB 205), and should be scheduled by setting an appointment.

Teaching Assistants

Mohammad Reza Jodeiri   jodeirim@mcmaster.ca

2   Schedule

The course is scheduled from June 23, 2025 to August 8, 2025.

2.1   Lectures

The course outline and assignments will be posted on Avenue to Learn. In addition, a GitHub link is provided in this course outline where all course materials and lecture notes will be maintained. Lecture recordings will be uploaded to the course's YouTube channel.

A portion of the course grade is allocated to class participation. Students are expected to review the lecture notes and watch the recordings prior to each lecture session. During lectures, I will

randomly ask students to write code segments—based on the lecture notes—while sharing their screen with the class. We will use this opportunity for discussion, clarification, and collaborative learning. I will also address student questions and occasionally explain or write additional code that extends beyond the provided notes. Active participation in these sessions is required to receive class participation marks.

Here is the lecture schedule for this course:

Days	Room	Time
Monday	JHE 264	9:30AM - 11:30AM
Wednesday	JHE 264	9:30AM - 11:30AM

2.2 Labs

During the lab sessions, we will cover various topics, including Linux installation (not necessary for MacOS users), configuring Visual Studio Code as an Integrated Development Environment (IDE), supplementary materials, version control and GitHub, solving assignments and project-related examples. There will be **pop quizzes during labs**. Quizzes will be only on Wednesdays. More details about quizzes will be discussed later.

Lab	Days	Room	Time
L01	MoWe	ETB 118	12:30PM - 4:30PM
L02	MoWe	BSB 249	12:30PM - 4:30PM

3 Course Description

The main priority of this course is preserving your mental health! You are going to have lots of errors, even when everything looks fine. Nothing is annoying than seeing an error and hearing the background sound for a programmer compiling the code. But debugging is the best way you can learn programming. Don't be shy to ask for help.

I might update the lecture notes on my GitHub. This course provides an introduction to programming, followed by a brief review of working in the Linux (or any Unix based environment) terminal. In the "Fundamentals of C Language" module, students will cover topics such as compiling and executing programs, variable types, and statement structures like loops and if conditions.

The "Intermediate Topics in C" module delves into subjects such as debugging, pointers, and dynamic memory allocation. Moving on to the advanced topics in C and effective code development practices, students will explore concepts including struct, typedef, reading a file on C, write or

output the result on a file, profiling, version control, memory leak, and documentation. All the topics listed above provides us with enough programming skills to start working on basics of data structures in Chapter 6. Chapter 7 and 8 is optional to study.

3.1   Prerequisites and Antirequisite

Prerequisites: COMPSCI 1MD3 **or** ENGINEER 1D04.

Antirequisite:

- COMPENG 2SH4

- COMPSCI 1XA3, 2XA3, 2S03

- SFWRENG 2MP3, 2S03, 2XA3

3.2   Resources

I have installed Linux Ubuntu distribution. Students with macOS do not need to install anything. If you have Windows installed. You have two option. One install Linux OS separately on your machine, or you can install WSL on your Windows. We will use VSCode as the IDE in our lectures.

Students need only to study the lecture notes. There might be some updates on lecture notes once in a while. Please stay tuned. If you are interested in more detailed programming in C you may take a look at Prof. Barak Shoshany, McMaster University, Lecture Notes for Foundations of Modern Scientific Programming.

4   Grading Policy

Quizzes are scheduled to take place during the lab sessions. You will receive an advance notice via Avenue a few days before each quiz, informing you of the specific quiz date. These quizzes will be conducted **in person** and will cover the **easy** to **medium** difficulty level topics discussed during our lectures. At the beginning of the lab session scheduled with a quiz, the questions will be released, and you have time to finish in a given time. The quizzes are **paper based** and you have to write the codes on the paper. During the quiz, your are NOT allowed to use your laptop, cellphone, any online or offline resources. You MUST rely only on your own knowledge of programming to solve the quiz. **No need to submit anything on Avenue to Learn for these quizzes**. TA(s) will mark your quiz and the grades will be released on Avenue a few days later. You can ask for feedback from your TA(s) or take a photo of the marked quiz.

The weights for the final grade in this course is shown in the following table.

Activity	Weight	Release Week
Assignment 1	5	3
Assignment 2	8	4
Assignment 3	10	5
Assignment 4	12	6
4-5 quizzes during lab sessions	35	Jun 30 - Aug 8
Class participation	5	Jun 23 - Aug 8
Total	75	

Submissions for assignments must be **original** and written by the students themselves from scratch. If students submit code that has been written by someone else, they will receive a **zero grade** for **academic dishonesty**.

While students are allowed to use **ChatGPT** in their assignments or any generative AI, they **must** acknowledge that they have used it. Additionally, they are required to **understand the meaning** of each line of code provided by ChatGPT. There might be a request for an in-person or online presentation from students to explain the code. It is allowed to include a **short code from other sources**, provided the following **conditions** are met:

1. The copied code is **short** and **not the main component** of the project.

2. The **reference** from which the code was copied is included.

The assignments **must be written in C** and **should not contain any errors**. An error means I cannot compile and run the code, which technically means a zero grade.

> **IMPORTANT!** For each assignment or quizzes, I will asked some students randomly or/and based on similarity of submissions to present their codes to me or TA(s), by:
>
> - Asking them to compile and run their codes.
>
> - Altering the code like introducing errors or removing a line and asking them to debug and fix the code, using the methods discussed in lectures.
>
> - Applying any topic covered in the lecture notes on their codes.
>
> Ensuring there's no plagiarism in our class is crucial to me. This presentation serves several purposes. It helps verify authorship and ensures fairness in grading. Verifying your understanding and authorship of the code is vital. Failure to present your code (**for any reason!**) may result in **a loss of up to 100% of the points** for the course work you have been asked to present. This ensures fairness and upholds the integrity of your work.

4.1 Submission Policy

Late submissions would not be accepted. MSAF must be submitted online. **We do NOT have any re-weighting option** for the missed course work. If you send me MSAF for a quiz, you must contact both me and your TA(s) to take the quiz as soon as possible.

Do **NOT** submit zip files. Submissions in zip file will **not** be marked. PLEASE, follow the instructions of each assignment carefully. You will be asked to submit multiple files for each assignment. Make sure you are submitting all the requested files. There will be no extension for The missed files, and you may even receive a zero grade if I cannot compile and run your code without the missed file.

5 Academic Integrity

We expect you to demonstrate honesty and ethical behavior throughout your learning journey. Your academic achievements should be built upon the solid foundation of integrity and honesty. It is essential for you to fully comprehend what actions constitute academic dishonesty. Academic dishonesty refers to knowingly engaging in behaviors that lead to unearned academic credit or unfair advantage. Such actions can have severe repercussions, such as receiving a grade of zero on an assignment, losing credit with a notation on your transcript indicating "Grade of F assigned for academic dishonesty," and even facing suspension or expulsion from the university. To familiarize

yourself with the various forms of academic dishonesty, please consult the Academic Integrity Policy. Here, we will highlight three examples of academic dishonesty, though this list is not exhaustive:

1. Plagiarism: This occurs when you submit work that is not your own or that has been obtained from another source without proper credit.

2. Improper collaboration in group work: Collaboration is encouraged, but it is essential to respect the boundaries of appropriate teamwork and avoid crossing into dishonest practices.

3. Copying or using unauthorized aids in tests and examinations: Unauthorized aids, such as cheat sheets or devices, should not be utilized during tests or exams.

Remember, fostering a culture of academic integrity is crucial, and we trust that you will make every effort to uphold these principles throughout your academic journey.

5.1   Plagiarism Detection

In certain courses, there might be the utilization of a web-based service called Turnitin.com, which plays a crucial role in identifying the authenticity and ownership of student-submitted work. Additionally, we may employ Moss, a tool that automatically detects similarities in programming code. Students are expected to electronically submit their work either directly to Turnitin.com or through an online learning platform (such as Avenue to Learn) that supports plagiarism detection. This ensures that the submitted work is thoroughly checked for any signs of academic dishonesty.

For more comprehensive information on McMaster University's usage of Turnitin and its policies, please refer to the Turnitin.com website. In conclusion, it is essential to emphasize that plagiarism has no room for escape. We take academic integrity seriously and are committed to upholding its standards.

6   Student Well-being and Code of Conduct

As a strong advocate of student well-being, I deeply resonate with the following quote from my one of my favourite Persian poets:

Human beings are members of a whole, in creation of one essence and soul. If one member is afflicted with pain, other members uneasy will remain. If you have no sympathy for human pain, the name of human you cannot retain. Saadi Shirazi (1210-1292 AD)

Please show respect and understanding for your fellow classmates and TA(s). "The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there

is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as the problem occurs."