



CMPT 130 – Introduction to Computing Science and Programming I

Semester: Fall 2022
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Office Hours: TBD

PREREQUISITES

BC Math 12 (or equivalent, or any of MATH 100, 151, or 157)

OBJECTIVES

This course is an introduction to computing science and computer programming. Students will learn fundamental concepts of computing science as well as develop basic skills in software development using the C++ programming language. Topics will include: information representation, elementary data types, control structures, functions, arrays and strings, fundamental algorithms, and memory management.

Topics:

- Information representation in computers: Binary Number System
- Elementary programming: Data types and basic input and output
- Control structures: Boolean expressions, conditional statements, loops
- Functions: Function libraries, passing parameters, returning values
- Aggregate Data Types: Arrays and strings
- Dynamic Memory Management: Addresses and pointers, allocation/de-allocation of dynamic memory, and the heap memory
- Fundamental algorithms and introduction to complexity of algorithms
- Recursion and stack memory

REQUIRED TEXT

Problem Solving with C++, 9th Edition, Walter Savitch, Addison-Wesley, 2012, 9780133591743

Reference book: Absolute C++, 5th Edition, Walter Savitch, Addison Wesley, 2012

COURSE ASSESSMENT

Quizzes:	8%
Assignments:	12%
Test (Week 4)	10%
Midterm Exam (Week 8):	25%
Final Exam:	45%
Total:	100%



NOTE: Final and Midterm Exams (70% of course total)

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). Moreover students who do not obtain a passing grade in the final exam may not obtain a pass (D or better). That is

1. If the **sum of your midterm exam and final exam** result is **below 35/70** then your course letter grade will automatically be **D or F** irrespective of how much your course total mark is.
2. If your **final exam** result is **below 22.5/45** then your course letter grade may be an **F** irrespective of how much your course total mark is.

Course Software

The course will use Microsoft Visual C++ 2010 Express Edition IDE that is already installed on the FIC lab computers. Therefore you are advised to get the same software and install it on your laptop computers. For detailed steps on how to get and install Microsoft Visual C++ 2010 Express on your own computer, please refer to the course Moodle page. Of course, you may also use a different compiler (such as Xcode for Mac or a different version of Visual C++) if you cannot use the course software for any reason; *however any course assessment work will be tested and marked using Microsoft Visual C++ 2010 Express Edition compiler and therefore it is your responsibility to always test your work on Microsoft Visual C++ 2010 Express Edition compiler before submission.*

Course Organization and Communication

Your active engagement with the instructor during class times is important. Moreover, we will heavily rely on electronic communication during the semester.

This includes:

1. **Moodle:** Course lecture notes, lab work practice questions, and any other supporting materials will be uploaded on to Moodle. Lecture videos recorded previously may also be made available for you as supporting materials. However please note that recorded videos might be out of date as the instructor keeps updating the course materials.
2. **Email:** We will use our FIC email accounts for any and all communications. For this reason you are required to attend to your FIC email account regularly in order to get any announcement from the instructor on time. Moreover if you would like to communicate with the instructor, then it must be sent from your FIC email account. In your email subject, write the course title (CMPT 130) and your class number. Emails sent from non-FIC email accounts will not get a response.



Course Assessment Details

Quizzes (8%)

There will be two quizzes during the semester. These quizzes will be open book and typically be problem solving and programming or analysis questions which will be posted onto Moodle and that you will need to work on a computer and submit your solution through Moodle. **The dates and times for the quizzes will not be announced before hand and they will be performed either during lab sessions or lecture times depending on the circumstances.** In order to be familiar with Moodle submission, we will have practice quiz before the actual quizzes start.

Assignments (12%)

There will be three assignments during the semester. Each assignment problem statement will be uploaded on Moodle with a clearly stated due date and time for submission. You will be required to submit your assignment solutions through Moodle. Moodle will not allow you to submit after the due date and time. Late submission of assignments through email or hard copies is not accepted.

Assignments are individual work. Each student must write his/her own code and submit. Submitting the same solution like any other student, past or present, is prohibited.

Test (10%)

There will be a paper based test on Week 4. This test will test the course materials discussed from Week 1 to Week 4. The exact date and time for the test will be announced as we get closer to the test date. The test is NOT open book.

Midterm Exam (25%)

There will be a paper based midterm exam on Week 8. This midterm exam will test the course materials discussed from Week 1 to Week 7. The exact date and time for the midterm exam will be announced as we get closer to the test date. The midterm exam is NOT open book.

Final Exam (45%)

There will be a paper based final exam at the end of the semester. This final exam will test all the course materials discussed throughout the semester. The exact date and time of the final exam is scheduled and announced by FIC. The final exam is NOT open book.



Notes

- *Every student is required to submit his/her own original work for any assessment of the course (quizzes, assignments, test, midterm exam, and final exam). Even if you are a repeat student, you still are required to submit original work. Any work that is not original comprises academic misconduct. If the instructor suspects any academic misconduct, then the instructor reserves the right to re-examine the student on a one to one basis and take further actions together with FIC administration.*
- *Every student is required to answer any assessment problem using the materials discussed in the course up to the time of the assessment. This means that submitting C++ language features that are not discussed in our course YET will get zero mark.*
- *Your marks of assessments will be recorded on Moodle in a timely manner. Please check your marks regularly. If there is any error, then contact the instructor immediately. All mark concerns except for the final exam MUST be resolved before the end of the last week of the semester.*

GRADE DISTRIBUTION

Grade distribution is not pre-determined and may vary from semester to semester.

MAKE-UP EXAMS

FIC does not offer any make-up opportunities for missed FINAL exams. Please be sure to check your final exam schedule very carefully. If you miss the final exam for any reason, please see an advisor immediately. You should also see an advisor immediately if you have documented reasons for exam accommodations.

Make-up opportunities for missed **Quizzes, Test or Midterm Exam** are also not available. In case of extenuating circumstances, the weight of the missed assessment will be transferred to the final exam. However for any weight to get transferred to the final exam, a student must provide written evidence to the instructor within 48 hours. Extenuating circumstances are defined as follows:

1. Circumstances which prevent a student from attending the exam, or
2. Circumstances which have resulted in the student being rendered absolutely unable to write the exam.

Extenuating circumstances do not include:

- Not feeling well, headache, stomachache, nervousness, cold, etc.,
- Misunderstanding the instructions about the exam date or time,
- Public transit issues,
- Pleasure related travelling,
- Flying back home,
- Commitments scheduled by a student in advance.



The documented evidence must be in English and describe one of the two scenarios above. In case of a death of a family member, a student must provide a death certificate. When medical documents are submitted, they must clearly show the student had visited the medical doctor in person on the day of the exam or before the exam date and they must come from a practicing doctor recognized by the Canadian Medical Association or other relevant organizations and who can be contacted for verification. Documents that cannot be validated will be considered unacceptable.

The instructor reserves the right to decide whether the weight of any missed assessment should be transferred to the final exam or alternatively give an equivalent make-up assessment in case of extenuating circumstances.

ACADEMIC INTEGRITY POLICY

Academic Integrity refers the values on which good academic work must be founded: honesty, trust, fairness, respect and responsibility. Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the college community and compromise the worth of work completed by others.

Students found to have breached the regulations related to any form of academic misconduct including but not limited to plagiarism and cheating will be subject to the following measures:

- First Offence: Awarded 0 for the assessment and given a permanent record on their file
- Second Offence: Awarded 0 for the course, regardless whether the offence was committed in the same course or another course
- Third Offence: Risk expulsion from FIC and the cancellation of Study Permit

It is solely the student's responsibility to be aware of Academic Integrity Policy and consequences of violating it. The policy is available at:

http://85401dc13f6ba5867f46-aacfababc729cd49a24606938417f53d.r33.cf6.rackcdn.com/FIC_Academic_Integrity_Policy.pdf

In Class Discipline Policy

I expect every student to be considerate for other students and the session and avoid any disturbance during class sessions. In particular, I strictly require you to either silent or switch off your cell phone whenever you join a class session. Any disturbance during class sessions will be handled as follows

1. First offence: I will give you a verbal warning.
2. Second offence: I will report you to advising with the intention of expelling you from the class if any further disturbance occurs.



3. Third offence: I will request FIC expel you from the class.

Final Exam Information

Please note that the final exam schedule will not be released until later in the semester. Please make sure to check the schedule on your FIC email and student portal. If you do not see your exam scheduled please contact me directly.

How Can I do well in this course?

First and foremost, you need to understand that CMPT 130 is not a programming course. Instead, it is about problem solving with the help of computers. As such it entails three fundamental issues:

1. You need to understand a given problem,
2. You need to know how to solve the problem by hand on paper using pen and pencil, and
3. You need to know the C++ programming language in order to solve the problem using a computer.

The first part requires continuous practice with different problems in order to develop problem understanding skills. As such I will provide several practice questions every week and you must solve the problems I provide in order to achieve this. You must also read the reference book and solve the practice problems in the book to help you further in this endeavour.

The second part requires you to have a notebook, pen and pencil ready all the time in order to think and solve problems on paper. It also requires continuous practice in order to develop your problem solving skills infinitesimally; starting with very simple problems and going up to solving very complicated problems by the end of the semester. The practice problems I provide every week start with simple ones and go to more difficult ones. As such you need to solve all the problems in order to climb the ladder of problem solving skills smoothly.

Finally, the third part requires spending quite a lot of time on a computer. Generally speaking the lab computers are available for you whenever the rooms are free. However, in order to do much more practice at home, I strongly recommend you to have a laptop and install in it Microsoft Visual C++ 2010 Express Edition and use your laptop as your main practice machine. If you need help with installing **Microsoft Visual C++ 2010 Express Edition**, consult the IT SQUAD available at the front desk.

Good luck and welcome to CMPT 130!