

Carleton University School of Computer Science  
**COMP 2404 - Introduction to Software Engineering**

Course Outline -- Winter 2020

Final version

Last modified: Tuesday, December-17-19

## 1. Class Schedule

Section	Class times	Classroom
Section A	Mon. and Wed. 1:00 pm - 2:30 pm	LA C164
Section B	Wed. and Fri. 4:00 pm - 5:30 pm	AT 301

Course web site:	<a href="#">cuLearn</a>
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## 2. Instructor Information

Instructor	Office	Email	Office Hours
Dr. Christine Laurendeau	5320 HP	<a href="mailto:christine.laurendeau@carleton.ca">christine.laurendeau@carleton.ca</a>	Tue. 12:00 - 2:00 pm Wed. 2:30 - 3:30 pm

**3. Teaching Assistants:** Detailed TA information can be found in [cuLearn](#).

## 4. Course Description

Introduction to object-oriented software development, with emphasis on design and implementation of medium-sized programs. Topics include abstraction, modularity, encapsulation, reusability, and design patterns.

## 5. Topics Covered

The course will cover the following topics, although some material may be omitted due to time constraints:

- Basics of C++ development
  - Linux platform
  - basic language features, programming conventions
  - class definitions, constructors and destructors
  - memory management
- Basics of object-oriented design
  - object-oriented design overview, object design categories, UML class diagrams
- Essential object-oriented techniques
  - encapsulation, inheritance, design patterns, polymorphism, overloading, templates, exception handling
- C++ library
  - STL, files and streams, C++11 features

**6. Prerequisite:** COMP 2401

## 7. Textbook(s)

No textbook is required for this course. There are several good C++ reference books that you can use, including: Deitel and Deitel, *C++ How to Program*, any recent edition, Prentice Hall.

## 8. Evaluation

Students will be evaluated in this course according to the following measures:

Component	Weight	Due Dates
Assignments (4)	20 %	Various, to be posted in <a href="#">cuLearn</a>
Tutorials (10)	8 %	Weekly
Midterm exam	27 %	Feb. 26
Final exam	45 %	TBA

## 9. Evaluation Notes

1. In order to pass the course, students must obtain a passing grade on the final exam.
2. All marking disputes must be addressed with the individual responsible for marking the work (TA or instructor), **within one week** of the marks being posted. In cases where a student and a TA cannot agree, the matter will be referred to the instructor for resolution.
3. There will be no extra credit available in this course.

## 10. Course Material

1. All concepts covered in class and during tutorials are part of the course material, including the course notes and annotations, all in-class exercises, tutorial exercises, and in-class and forum discussions.
2. Lecture recordings may be provided, but **exclusively** as a supplemental study aid. They are **not** a substitute for lecture attendance and note taking. *Some lectures may not be recorded, and some recordings may not be available*, at the sole discretion of the instructor. Students are responsible for learning the material covered during all lectures, whether recordings are available or not.
3. All materials created for this course (including, but not limited to, course notes, coding examples, lecture recordings, tutorials, tutorial code, assignments, assignment code bases, marking schemes, tests, midterms, exams, and test/midterm/exam solutions), except where otherwise noted, remain the *intellectual property of the instructor*. They are intended for the personal and non-transferable use of students registered in the course. Reproducing, reposting, and/or redistributing any course materials, in part or in whole, without the written consent of the instructor, is **strictly prohibited**.

## 11. Assignments

1. There will be four (4) assignments in this course. Assignment requirements will be posted in *cuLearn*.
2. Additional information and requirement clarifications will be posted in the assignment discussion forums in *cuLearn*. Students are responsible for following all instructions posted in these forums.
3. All assignments must be completed in the programming environment (Virtual Machine) provided for the course.
4. All assignment code submitted for credit, with the exception of base code provided by the instructor, must be **original**, and the student submitting the assignment code must be its sole author.
5. **Late penalty:** Late assignments will incur a deduction of 5 marks (out of 100) for every 30 minutes, or part of 30 minutes, up to a maximum of three (3) hours past the submission deadline. Once this three-hour time window has elapsed, the *cuLearn* submission link will expire, and no assignment submissions, substitutions, or corrections will be accepted for any reason.
6. Only assignment files uploaded into *cuLearn* will be graded for credit. Students are responsible for the integrity of their assignment submissions. Submissions that contain incorrect, corrupt, or missing files may receive a grade of **zero**, in accordance with the assignment marking scheme. Corrections to submissions **will not be accepted** after the submission link expires.
7. The **only** valid reason to appeal an assignment grade is an error by a TA in following the grading scheme. Student errors, including but not restricted to submitting a wrong or corrupted file, or submitting code that doesn't compile or doesn't run, are **not** a basis for appealing a grade.
8. A maximum of one (1) assignment may be waived, for reasons of medical emergency only. No additional assignments will be waived, for any reason.
9. Assignment marks will be released to students when **all** the grading is completed.

## 12. Collaboration Policy

1. Collaborating on the assignments and/or the tutorials is **strictly disallowed** and will be reported to the Dean of Science as an instructional offence. You must complete the work by yourself.
2. Posting assignment solutions and/or tutorial solutions online and distributing assignment solutions and/or tutorial solutions to other students **at any time** is strictly prohibited and will be reported to the Dean of Science as an instructional offence. This includes work posted on source control sites like GitHub.
3. DO NOT email your code to other students. DO NOT upload your code to any web site, at any time. DO NOT copy code from any sources, even cited ones. DO NOT work with other students. DO NOT get help from anyone other than the course TAs or the instructor. DO NOT submit any code, or portion thereof, written by anyone other than yourself. All of these are examples of plagiarism and will be reported to the Dean of Science as an instructional offence.

### 13. Tutorials

#### *Tutorial attendance:*

1. Tutorials begin on Jan. 15. The official schedule with all tutorial dates for the term is posted in [cuLearn](#).
2. There will be ten (10) tutorials, and the best eight (8) will count towards your final grade. Please note that all ten (10) tutorials are part of the course material, and all course material may be tested on the midterm and final exams.
3. You **must** attend the tutorial session for which *you are registered*.
4. Tutorials will **not** be posted in advance, for any reason.
5. Tutorial work **cannot** be submitted for credit. To get your grade, you must do the work during your tutorial session, and you must have it evaluated by a TA at the end of that same session.
6. Tutorials must be completed **individually**. Collaboration between students is strictly disallowed and will be reported to the Dean of Science as an instructional offence.

#### *During the tutorial session:*

7. You must work on the tutorial provided. Tutorial questions must be completed in sequence.
8. You must bring paper and pencil to each tutorial. You must save your work after each tutorial.

#### *Tutorial grading:*

9. Tutorial TAs will assign you a grade at the end of the tutorial session.
10. For each tutorial, you get one point (1% of your final grade) if:
  - (a) you work on the tutorial during the entire session, and
  - (b) you complete at least 50% of the tutorial work
11. For each tutorial, you get zero if:
  - (a) you are absent for any reason, or
  - (b) you do other work during the session, or
  - (c) you do not complete at least 50% of the work, or
  - (d) you complete or start the tutorial work before your session
12. Tutorial grading is at the discretion of the TAs and is not negotiable.

### 14. Communications Policy

1. Students are expected to check their email on a **daily** basis. Important course-related announcements will be posted on [cuLearn](#) and forwarded to students' email accounts.
2. Due to a high volume of emails, *the instructor will be unable to answer emailed questions*, except for matters of a confidential nature. Course policy requires that students post **all questions** about the course and the assignments in the appropriate discussion forum in [cuLearn](#). Please verify whether your question has already been answered. If not, you can post your question, and it will be answered in the forum.
3. TA office hours are the first point of contact for students requiring help with completing assignments.
4. Instructor office hours are the first point of contact for student requiring help with the course material or academic advising.
5. The instructor's office hours are in effect from Jan. 6 to Apr. 7, excluding the week of the Winter Break.
6. In case of technical issues with the installation or operation of the provided Virtual Machine, students are required to first **read the documentation** posted on [cuLearn](#). Additional assistance may be provided by the course TAs, and not by the instructor.
7. Students are expected to behave and communicate in a **courteous** and **professional** manner at all times. Any communications, either in person, or online in forum posts and email, that do not follow the basic precepts of common courtesy and professionalism will not be answered, and in extreme cases will be reported to university authorities.

## 15. Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at [undergraduate\\_advisor@scs.carleton.ca](mailto:undergraduate_advisor@scs.carleton.ca). The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

## 16. University Policies

- **Student Academic Integrity Policy:** Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar.
- **Plagiarism:** As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science.
- **Unauthorized Co-operation or Collaboration:** Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

## 17. Requests for Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

- **Pregnancy obligation:** Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the [Student Guide](#).
- **Religious:** Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see the [Student Guide](#).
- **Academic Accommodations for Students with Disabilities:** The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the [PMC website](#) for the deadline to request accommodations for the formally-scheduled exam (if applicable).
- **Survivors of Sexual Violence:** As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)
- **Accommodation for Student Activities:** Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see [the policy](#).

For more information on academic accommodation, please contact the departmental administrator or visit: [students.carleton.ca/course-outline](http://students.carleton.ca/course-outline)