

Carleton University School of Computer Science
COMP 3004 – Object-Oriented Software Engineering
Course Outline -- Fall 2019
Final version
Last modified: Monday, August-26-19

Class Schedule

Class times:	Tue. and Thu. 4:00 pm – 5:30 pm
Classroom:	TB 360
Course web site:	cuLearn

Instructor Information

Instructor	Office	Email	Office Hours
Dr. Christine Laurendeau	5320 HP	christine.laurendeau@carleton.ca	Tue. 1:30 pm - 3:30 pm

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

Course Description

Theory and development of software systems. This course will discuss computer ethics. Possible topics include: software development processes, requirement specification, class and scenario modelling, state modelling, UML, design patterns, traceability. Students are to complete a team project using a CASE tool.

Topics Covered

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

- Introduction to software engineering (overview, team project, UML notation)
- Requirements analysis (requirements specification, traceability, scenarios, use cases, functional and dynamic models)
- High-level system design (design patterns, subsystem decomposition, interfaces, architectural styles)
- Detailed object design (reuse, object model, contracts and constraints)
- Implementation (model transformation, refactoring, forward/reverse engineering, optimizations)
- Testing (test planning, usability testing, unit testing, integration testing, system testing)
- Software management (project management, software development processes, configuration management)
- Professional ethics (professionalism, code of ethics, case studies)

Prerequisite: COMP 2401, COMP 2404, and COMP 2406

Textbook(s)

Bernd Bruegge and Allen H. Dutoit, *Object-Oriented Software Engineering: Using UML, Patterns, and Java*, 3rd edition, Pearson, 2009, ISBN: 0136061257

Evaluation

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

Component	Weight	Due Dates
Assignments (3)	15 %	Various, to be posted in cuLearn
Group project (2 deliverables)	25 %	Various, to be posted in cuLearn
Midterm exam	15 %	Oct. 29
Final exam	45 %	TBA

Evaluation Notes

- In order to pass the course, students must obtain a passing grade on the final exam.
- For the group project, each team member must contribute an **equal amount of work** to every deliverable. Students who contribute less than their equal share will have their individual mark reduced based on their contribution to the submitted work.
- All marking disputes must be addressed with the individual responsible for marking the work (a TA or the 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.
- There will be no extra credit available in this course.

Important Dates

- Design review presentations will take place in class on Nov. 12, Nov. 14, Nov. 19, Nov. 21, and Nov. 26. Designs presented will be on a topic of the instructor's choice. Each team is required to present their design when they are called upon in class, **without prior notice**. Each team member is required to present for an equal amount of time.

Course Material

- All concepts covered in class are part of the course material, including the course notes and annotations, all in-class exercises, and in-class and forum discussions.
- 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.
- All materials created for this course (including, but not limited to, course notes, coding examples, lecture recordings, assignment requirements, project and deliverable requirements, rubrics, marking schemes, assignment and deliverable solutions, 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, re-posting, and/or redistributing any course materials, in part or in whole, without the written consent of the instructor, is a copyright violation and is **strictly prohibited**.

Collaboration Policy

- Collaboration on the individual assignments is **strictly disallowed** and will be reported to the Dean of Science as an instructional offence. You must complete the work by yourself.
- Collaboration on the project is restricted to members of the same officially registered team, which will consist of no more than four (4) students.
- Inter-team collaboration on the project is **strictly disallowed** and will be reported to the Dean of Science as an instructional offence.
- Posting assignment and/or deliverable work online, and distributing assignment and/or deliverable work 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 **publicly** posted on source control sites like GitHub.

Assignments

- There will be three (3) individual assignments in this course. Assignment requirements will be posted in [cuLearn](#).
- 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.
- All assignment work submitted for credit must be **original**, and the student submitting the work must be its sole author.
- All assignments must be submitted in [cuLearn](#) before the due date and time. Late assignments will **not** be accepted, for any reason.
- A maximum of one (1) assignment may be waived, for reasons of medical emergency only, supported by a completed Carleton University Medical Certificate form, submitted to the instructor within **one week** after the assignment due date. No alternate documentation will be accepted. No additional assignments will be waived, for any reason.
- Only assignment files uploaded into [cuLearn](#) will be graded for credit. Students are responsible for the integrity of their assignment submissions. Corrections to submissions **will not be accepted** after the submission link expires.
- Assignment grades will be released to students when **all** the grading is completed.

Project

Teamwork

- All project work is team-based. Teams will consist of no more than four (4) students.
- Every team will be assigned the same project, regardless of team size.
- The configuration and membership of all teams must be approved by the instructor, and so must all changes to the teams. Deliverables submitted by unauthorized teams will be given a grade of zero.
- The instructor retains the exclusive right to dissolve teams and/or reorganize team membership at her discretion and without prior notice.
- Students who fail to contribute sufficiently to a deliverable will be removed from their team.
- The instructor will assist in the formation of initial teams. However, students who are removed from a team are responsible for finding a new team to join, subject to instructor approval. Failure to join a team will result in the student becoming a one-person team.

Deliverables

- There will be two (2) project deliverables in this course, and the requirements will be posted in [cuLearn](#).
- Additional information and requirement clarifications will be posted in the deliverable discussion forums in [cuLearn](#). Students are responsible for following all instructions posted in these forums.
- Every student is expected to work on the project for a *minimum* of nine (9) hours every week, outside of class time, beginning as soon as the requirements for the first deliverable are posted.
- Programming deliverables must be completed in the programming environment (Virtual Machine) provided for the course.
- All deliverable work submitted for credit must be **original**, and the students submitting the work must be its sole authors.
- All deliverables must be submitted in [cuLearn](#) before the due date and time. Late deliverables will **not** be accepted, for any reason.
- Every team member is expected to contribute equally to each deliverable. Students who experience medical issues and/or family emergencies will be required to make up the missed work before the deliverable due date and time.
- Peer reviews will be submitted in confidence by individual students at the same time as each deliverable. Peer reviews will be used to adjust each team member's individual grade for a deliverable, based on the team member's contribution to the submitted work. Students who contribute less than their equal share will have their grade reduced correspondingly.
- Failure by a student to submit a peer review will result in the student losing the right to argue against a reduction of their grade based on insufficient contribution.
- Only deliverable files uploaded into [cuLearn](#) will be graded for credit. Students are ultimately responsible for the integrity of their submissions. Corrections to submissions **will not be accepted** after the submission link expires.
- Deliverable grades will be released to students when **all** the grading is completed.

Communications Policy

- Students are expected to check their email on a **daily** basis. Important course-related announcements will be posted on [cuLearn](#) and forwarded to students' cmail accounts.
- 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, as well as the assignments and project deliverables, in the appropriate 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.
- The instructor's office hours are in effect from Sep. 4 to Dec. 6, excluding the week of the Fall Break.
- 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 the SCS web site. Additional assistance may be provided by the course TAs, and not by the instructor.
- 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.

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. 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.

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.

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 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 its 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
- **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