

Carleton University
School of Computer Science
COMP 3004A: Object-Oriented Software Engineering
Fall 2020

Class Schedule

Lectures are held every Monday and Wednesday, 1:05 PM – 2:25 PM (online).

Slack is used for course communication, news and reminders. Please join [COMP3004 channel](#).

Schedule is posted on the course website.

Fall break: October 26–30, 2020 (no classes).

Course Website

http://olgabaysal.com/teaching/fall20/comp3004_f20.html

Instructor

Dr. Olga Baysal

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Office Hours: by appointment

TAs:

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Short Description

Development of object-oriented software systems: theory and practice. Topics include: Computer ethics, software development processes, requirement specification, class and scenario modeling, state modeling, UML, design patterns, traceability. Students are to complete a team project.

Topics Covered

Among topics, we will cover: software development processes, requirements engineering, use cases, user stories, class and scenario modelling, architecture styles and design patterns, computer ethics.

Learning Objectives

- Understand the difficulties of a waterfall approach to software development and why incremental and agile development processes such as SCRUM are better
- Critique an existing architecture or design.
- Differentiate how various architectural styles and design patterns enhance and degrade a system's functional-and non-functional properties.
- Generate and justify an architecture and/or design given a collection of requirements.
- Produce and present concise and unambiguous architecture and design descriptions.
- Create and implement an architecture and design, refining it into a complete system.
- Gain experience in team-based software development.

Prerequisite

Prerequisite(s): COMP 2401, one of COMP 2404, SYSC 3010, SYSC 3110 and COMP 2406 or SYSC 4504.

The student is assumed to have a strong background in object-oriented programming, as provided by COMP 2404. It is beneficial for students to have experience with version control systems. In addition to programming, you must be able to structure, write, and present industrial quality documents in clear and concise English.

Evaluation

Students will be evaluated according to the following components:

- Project deliverables (50%):
 - Deliverable 1: project proposal (5%)
 - Deliverable 2: prototype + demo (5%)
 - Deliverable 3: project architecture + design (30%)
 - Deliverable 4: presentation + video (10%)
- Final exam, take home, 48 hours to complete (50%)

Notes

1. Once the project starts, all group members are to **log weekly** their duties/achievements and the time they allocate to these duties. Each student is required to submit on a weekly basis this log to the project's repo. Failure to do so will be penalized for each missing submission.
2. The expectation is that you will work approximately 12 hours per week on this course; at least 8 of these hours will be on the project. Given that the course lasts 13 weeks, each team member is expected to work on the project *at least* 100 hours. You should be able to accomplish something pretty great in this time; please make the most of this opportunity.
3. All team members do not necessarily receive the same mark! The contribution of each team member will be taken into account by the instructor in determining the mark of each team member for the project.

4. The team project MUST ideally be done in a group of 4 members.
5. You will have to produce and submit a video demonstrating your app. Details will be given later.
6. Should illness (or exceptional circumstances approved by the Faculty) prevent you from submitting on time any project deliverables or any of your weekly team logs, you must email me a medical certificate within 3 days of the missed deadline.
7. Collaboration on group projects is restricted to members of the same group. Inter-group collaboration is disallowed. Any form of plagiarism for the project will be reported to the Faculty.

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 Writing Tutorial Services.

University Policies

For information about Carleton's academic year, including registration and withdrawal dates, see [Carleton's Academic Calendar](#).

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, visit [Equity Services](#).

Religious 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, visit [Equity Services](#).

Academic Accommodations for Students with Disabilities. If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC 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 your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the [Paul Menton Centre](#) website.

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 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](#).

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. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found [here](#).

Plagiarism. If you are unsure of the expectations regarding academic integrity (how to use and cite references, how much collaboration with lab- or classmates is appropriate), ASK your instructor. Sharing assignment or quiz specifications or posting them online (to sites like Chegg, CourseHero, OneClass, etc.) is considered academic misconduct. You are never permitted to post, share, or upload course materials without explicit permission from your instructor. Academic integrity offences are reported to the office of the Dean of Science. Penalties for such offences can be found on the ODS webpage: <https://science.carleton.ca/academic-integrity/>.

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.