<div align="center">

Carleton University
School of Computer Science
COMP 3004A: Object-Oriented Software Engineering
Fall 2018
Last updated on September 1ˢᵗ, 2018

</div>

Class Schedule
   Lectures: Tuesday and Thursday at 10:05   UC231
   Fall Break: October 22-26 (no office/TA hours)
   Office/TA hours   will be held starting the week of September 10th
                       and run until Dec 7th inclusively *with some exclusions*

Instructor Info
         Jean-Pierre Corriveau   room: 5328 HP
         email: jeanpier AT scs.carleton.ca
         office hours: Tuesday 11:30-13:00 or by email appointment

Course Website   **http://people.scs.carleton.ca/~jeanpier/3004F18/**
cuLearn will be used for postings/submissions pertaining to the project and for all
announcements. Any posted course material will be on the course's web page not in
cuLearn. All material remains the exclusive intellectual property of their author(s).

Textbook:
Head First Design Patterns, Freeman & Freeman, O'Reilly (publishers)

TAs: names, emails, office hours
         will be posted in 3004 announcements on cuLearn

Short Course Description
This course teaches an *agile* approach to team-based object-oriented software
development (OOSD). More precisely, we use a *test-driven* repository-based approach to
software development. The use of *design patterns* guides how we organize object-
oriented code for ease of change. We will also consider the role of models within this
proposed approach to OOSD.

Topics Covered
Among topics, we will cover: Software Development Processes, the Agile manifesto,
Test-Driven Development (TDD), a selection of the design patterns of Gamma et al.
(Go4), a subset of the Unified Modeling Language (UML 2.0), and computer ethics.
Time permitting, we will also discuss: more advanced features of UML, design by
contracts and death march projects.

Learning Objectives
- Understand the advantages of agile development over a waterfall process
- Understand the basics of TDD and of using JUnit and a software repository
- Understand a representative subset of the Gang of Four (Go4) design patterns
- Know the essentials of UML 2.0
- Gain experience with the team-based development of (models and code for) a medium-sized game to be showcased
- Gain experience with TDD, continuous integration and Go4 patterns.

Prerequisites
The student is assumed to have a strong background in object-oriented programming, as provided by COMP 1406 and COMP 2404.
In addition to programming, you must be able to structure, write, and present quality documents in clear and concise English.

Evaluation
Students will be evaluated according to the following components:

1) *Individual* assignment   10%
   ➔ Using a repository, JUnit and TDD to code and test a simple card game

2) *Team* Project: (Iteration 1: 20%   Iteration 2: 30%)
   ➔ The weight of each iteration is fixed and will NOT change.
   ➔ It is expected you identify each submission to the repository with its contributor(s). You must grant access to your repository to the TA assigned to your team as soon as this information is posted.
   ➔ As will be explained in class, **continuous integration is essential.**
   ➔ You can propose a team of *exactly 3 members* before 7AM September 27th
   ➔ Teams (of typically 3 or 4) will be posted to cuLearn by October 2nd
   ➔ Projects are to be in Java: no other language is allowed
   ➔ You receive **individual** marks for each of the two iterations. These marks are based on your identified repository contributions, your team's weekly progress reports, peer evaluations and TA correction grids.
   ➔ A lecture will be devoted early in the term to team issues.
   ➔ Iteration 2 will likely require you to learn and use by yourself some material.
   ➔ Collaboration on team projects is restricted to members of the same team. **Inter-team collaboration is strictly disallowed**. Any form of plagiarism will be reported to the Dean of the Faculty.

3) Open-book 3 hour final exam: 40%
   ➔ Date and time to be announced by the Scheduling Office
   ➔ The exam will address material presented in class, which covers much more than what is directly required by the project.
   ➔ There is no supplemental or grade raising exam in this course.

Some additional remarks for the project:
1) **Due dates:**
   - *No* extensions are possible for *any* of the deliverables and late submissions are not accepted: you must submit what you have by the posted deadline
2) **Weekly workload:**
   - It is expected you devote approximately 9 hours per week to this course. It is highly undesirable to *not* sufficiently contribute during a week as this almost inevitably slows down the whole team. Any poor or non-contributor (to be identified via team progress reports and analysis of submissions, and possibly via peer evaluations) will receive a penalty each week s/he is deemed to contribute insufficiently, unless a) the team is notified immediately of any absence and b) a medical certificate is provided to the instructor immediately upon returning to school.
   - Should a student not be ill but know that s/he will not be able to contribute approximately 9 hours in a week, s/he should immediately notify his/her teammates, the team's assigned TA and the instructor. That student will be expected to contribute the missing hours as *additional* hours in the following one or 2 weeks.
   - Each week, each team (*not* each team member) must submit to culearn (i.e., not by email) a *single* team report that states for each team member:
     - the number of hours spent on the project since the last report
     - what that team member has achieved wrt the requirements/ user stories
     - what methods and tests s/he has submitted to the repository (so this can be actually cross-checked against the actual submission history of the project)
3) **Team management:**
   - A fundamental learning objective of this course is teamwork. *Do not ask to work alone.* Do expect heated discussions if not conflicts in the process of working in a team. Team issues will be briefly discussed in class.
   - Should your team shrink, through withdrawals, to two students, do proceed as a team but contact the instructor **immediately** to obtain reduced requirements for the iteration. Should you be left alone, again immediately contact the instructor. Depending on how far we are in an iteration, you will either be reassigned to another team OR obtain reduced requirements for the current iteration.
   - On October 31st and **only on October 31st**, you may submit to the instructor by email a request to change teams. You must motivate this request AND state which team you wish to join. The instructor must also get on that day an email from that target team stating that they are willing to accept you. Approval is not automatic!

About passing the course:
   - In order to get a D- or better in this course:
     - The *total* of the marks you accumulate for the individual assignment *and* the two iterations must be superior to 30 (out of 60)
     - The mark you obtain on the final, out of 40, must be judged to be a passing grade by the instructor. Please note that what constitutes a passing grade for the final is not necessarily 20 out of 40 but is instead determined by the instructor in light of the performance of all those who attend the final exam.

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 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.

Science Student Success Centre (SSSC)

The Science Student Success Centre is a central advising unit for students in Science courses. We help students achieve their goals by providing access to resources, workshops and activities that enhance their academic and study skills, and help them make key connections with their peers. Mentors can help you customize an individual study plan which includes weekly and semester work or study schedules, and also help when you need information on developing a new study strategy, obtaining summer job opportunities, or clarifying ideas and concepts to better understand and cope with new course content. Science mentors can help you **learn how to learn what you need to learn** for your classes. Drop by the Science Student Success Centre at 3431 Herzberg Laboratories or visit http://sssc.carleton.ca/

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.
The policy is at: https://carleton.ca/senate/wp-content/uploads/Academic-Integrity-Policy1.pdf

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.

Unauthorized co-operation or collaboration

As mentioned above, collaboration between students submitting distinct assignments is NOT permitted in this course.

Equity Statements

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, visit the Equity Services website: **carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf**

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 the Equity Services website: **carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf**

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. **carleton.ca/pmc**

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**

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. **https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf**

For more information on academic accommodation, please contact the departmental administrator or visit: **students.carleton.ca/course-outline**

Medical Certificate
The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations or assignments in undergraduate courses. To access the form, please go to http://www1.carleton.ca/registrar/forms/